Groundwater Monitoring Summary Report
September 2004 (Third Quarter)
American Chemical Service, Inc. National Priorities List Site
Griffith, Indiana

PREPARED FOR:

ACS RD/RA EXECUTIVE COMMITTEE

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SECTION 1.0 – EXECUTIVE SUMMARY

MWH Americas (MWH) has prepared this Groundwater Monitoring Summary Report to present the results from the September 2004 groundwater sampling event at the American Chemical Service, Inc. (ACS) National Priorities List (NPL) Site in Griffith, Indiana. These activities were performed in accordance with the revised long-term groundwater monitoring plan (LTGMP) and the November 2001 United States Environmental Protection Agency (U.S. EPA)-approved Quality Assurance Project Plan (QAPP). The U.S. EPA and Indiana Department of Environmental Management (IDEM) approved the revised LTGMP in a letter dated June 26, 2002.

During the September 2004 sampling event, water level measurements were collected at 79 monitoring wells, piezometers, and staff gauges, and groundwater samples were collected at 12 upper aquifer wells and 16 lower aquifer wells in the monitoring network. Various maintenance activities were also conducted at several wells in the network. Additionally, the annual sampling of five residential wells was conducted during September 2004. The monitoring well samples were analyzed for indicator volatile organic compounds (VOCs) and the residential well samples were analyzed for low-concentration organics (VOCs, semi-volatile organic compounds [SVOCs], pesticides and poly-chlorinated biphenyls [PCBs]), and inorganic compounds (metals and cyanide).

September 2004 groundwater elevations in the upper and lower aquifers were generally lower than those measured in March 2004 and September 2003; however hydraulic gradients remained consistent with those recorded during previous sampling rounds.

Groundwater samples collected from 12 upper aquifer monitoring wells indicate that groundwater plumes to the north and south of the ACS Site are not expanding and that concentrations within the plumes are decreasing. Chloroethane exceeded the maximum baseline concentration in the sample from interior well MW19. Benzene and chloroethane were not detected in the sample from interior well MW45. Benzene and chloroethane concentrations detected in samples from other upper aquifer wells were below their respective maximum baseline concentrations.

Groundwater results at 16 lower aquifer wells continue to show fluctuating concentrations. Benzene exceeded the maximum baseline concentration in the sample collected from MW10C; however, concentrations of benzene in samples from this well have decreased since March 2003. Chloroethane exceeded the maxim-um baseline concentration in the sample collected from MW29; recent chloroethane concentrations in samples from this well have shown an increasing trend. Results from the sample collected at well MW09R, a well nested with MW29, show

that benzene and chloroethane concentrations continue to decrease at this well. Concentrations of benzene from the sample collected at MW56 increased, but remained in the same general concentration range as previous results. The benzene concentration in the sample collected at downgradient well MW53 decreased slightly since March 2004. Recent benzene concentrations in the samples collected from this well had shown a slowly increasing trend.

In response to the baseline exceedance at upper aquifer well MW19, MWH proposes to continue monitoring the concentrations in this well.

In response to the baseline exceedances and/or increasing concentration trends at MW10C, MW29, MW53, and MW56, MWH proposes to continue monitoring the concentrations in these wells. MWH is also conducting a lower aquifer investigation to determine the source and potential migration pathway of these benzene detections.

Results from the water samples collected from the residences near the ACS Site continue to show that no site-related compounds have impacted these wells.

SECTION 2.0 – SEPTEMBER 2004 DATA COLLECTION ACTIVITIES

The groundwater monitoring activities conducted at the Site during September 2004 included measuring water levels, collecting samples from monitoring wells, conducting maintenance activities at several wells in the monitoring network, and collecting samples from five residential wells.

2.1 WATER LEVEL MEASUREMENTS

Water level measurements were collected at 79 upper and lower aquifer wells, piezometers, and surface water staff gauges on September 20, 2004. Water levels were not measured at three locations in the monitoring network (P93, P94, and MW10C). Piezometers P93 and P94, were damaged and had been inaccessible for some time, however they were replaced during Phase 1 of the Lower Aquifer Investigation in November 2004, and will be monitored in future events. MW10C currently contains a groundwater pump and associated piping which prevents water level measurement. **Table 1** contains the water level measurements, map coordinates (reference points), top of well casing elevations, and calculated groundwater elevations for the measurement points. Also included in the table is an explanation of any difficulties encountered while measuring water levels at the well.

2.2 GROUNDWATER SAMPLING

Groundwater sampling activities were conducted from September 21 through 27, 2004. Each monitoring well was sampled using low-flow methods in accordance with the Groundwater Sampling Standard Operating Procedure (SOP) developed for the revised LTGMP. Field parameters (pH, specific conductivity, temperature, dissolved oxygen [DO], oxidation-reduction potential [ORP], and turbidity) were measured during well purging, and the values recorded upon stabilization are presented in **Table 2**.

The groundwater samples were sent overnight under chain-of-custody to CompuChem Laboratory, Cary, North Carolina, where they were analyzed for the parameters summarized in **Table 3**. The table lists the upper and lower aquifer monitoring wells in the monitoring well network and the parameters analyzed in the samples collected from each well during the September 2004 event. In accordance with the revised LTGMP, the September 2004 analytical results were compared to the 1997 maximum baseline concentrations. The comparison tables are provided in **Appendix A**.

2.3 MONITORING WELL MAINTENANCE

Prior to the start of the sampling event, various maintenance issues were addressed at several wells and piezometers in the well network. These activities included:

- Re-developing 12 upper aquifer wells.
- Replacing deteriorating tubing in several wells.
- Filing down the top of the well casings to remove sharp edges.
- Replacing missing or deteriorating locks and well plugs.

A summary of these activities is provided in **Table 3**.

2.4 RESIDENTIAL WELL SAMPLING

The annual sampling of five residential wells near the Site was conducted on September 27 and 28, 2004. The residential wells were sampled by collecting untreated water (prior to water softening) from an outside spigot. The water was measured for field parameters in accordance with the sampling SOP. Upon stabilization of the parameters, the water was collected for submittal to the laboratory. The field parameters recorded upon stabilization are presented in **Table 2**.

Since the residence at PW-Y (1002 Reder Rd.) was connected to a municipal water source in 2003 and is no longer utilizing their water supply well screened in the lower aquifer, this well was not sampled. In its place, MWH sampled well PW-T, located at 1043 Reder Road. This well will replace PW-Y in future residential well sampling events.

Additionally, well PW-B (1009 Reder Road) could not be sampled as the spigot was intentionally taped shut and the resident could not be contacted. The resident at 1130 Reder Road asked to have his well tested, and with EPA approval, MWH sampled this well (PW-Re; the "e" stands for the easternmost well at this address) in the place of PW-B for this round.

The residential water samples were sent overnight under chain-of-custody to CompuChem Laboratory, Cary, North Carolina, where they were analyzed for low-concentration organics (VOCs, SVOCs, PCBs, and pesticides) and inorganics (metals and cyanide). In accordance with the revised LTGMP, the 2004 residential well analytical results were compared to the 1997 maximum baseline concentrations. The comparison tables are provided in **Appendix A**.

SECTION 3.0 – SEPTEMBER 2004 GROUNDWATER DATA EVALUATION

3.1 GROUNDWATER FLOW SYSTEM DATA

The groundwater elevations listed in **Table 1** were used to develop a water table contour map (**Figure 1**) for the upper aquifer and a potentiometric surface contour map for the lower aquifer (**Figure 2**).

During September 2004, the groundwater elevations measured in upper aquifer wells and piezometers were about two feet lower than measured in March 2004, and about 0.5 feet lower than measured in September 2003. These lower groundwater elevations are likely related to seasonal variations in precipitation.

The groundwater flow pattern in the upper aquifer during September 2004 was consistent with previous monitoring events. Regional groundwater flow is generally east to west. It is diverted to the north and south by the barrier wall as it approaches the site. The gradient northwest of the site is relatively flat due to the affects of the PGCS trench, barrier wall, and discharge points from the groundwater treatment plant. Groundwater to the south of the site flows to the south and southeast.

The groundwater elevations measured in lower aquifer wells in September 2004 were about 2.3 feet lower than measured in March 2004, and about 0.5 feet lower than measured in September 2003. These fluctuations in groundwater levels are similar to those observed in the upper aquifer.

The groundwater flow pattern in the lower aquifer is northward at a relatively low hydraulic gradient. This is consistent with historical groundwater data. The hydraulic gradient calculated between wells MW50 and MW52 was 0.00026 feet per foot (ft/ft) during September 2004. The average hydraulic gradient calculated from measurements in the lower aquifer since 1995 is 0.00039 ft/ft.

The groundwater elevations measured inside and outside of the barrier wall and near the PGCS will be discussed in the *Quarterly Monitoring Report for Active Treatment Systems - Third Quarter 2004*, which will be submitted in early 2005.

3.2 MONITORING WELL ANALYTICAL DATA

Following the LTGMP, samples from 12 wells in the upper aquifer and 16 wells in the lower aquifer were analyzed for indicator VOCs, which include benzene, chloroethane, 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, cis-1,2-dichloroethene, trans-1,2-dichloroethene, tetrachloroethene, trichloroethene, and

vinyl chloride. In accordance with the LTGMP, the analytical results from the upper and lower aquifer monitoring wells were compared to the 1997 maximum baseline concentrations and to data from previous sampling rounds.

3.2.1 Upper Aquifer Results

Table 4 summarizes the indicator VOC results in the samples from 12 upper aquifer wells collected during September 2004. **Figure 3** shows the well locations and detected indicator VOCs on a map of the ACS Site. Graphs presenting the concentrations of benzene and chloroethane versus time for the upper aquifer monitoring wells are presented in **Appendix B**. The laboratory analytical reports and validation narrative for samples from the upper aquifer are provided in **Appendix C**.

VOC Results

Benzene and chloroethane impacts have been observed outside of the barrier wall in two areas of the upper aquifer. North of the site, these detections have consistently occurred in samples collected from wells MW48 and MW49. South of the site, benzene and chloroethane detections have extended from samples collected at MW06 to MW19 and MW45. The groundwater monitoring program in the upper aquifer has focused on monitoring concentrations upgradient, within, and downgradient of these impacted areas.

- Upgradient wells: Benzene and chloroethane were not detected in samples collected from upgradient monitoring wells MW11 or MW17. Tetrachloroethene, which has occasionally been detected at trace concentrations in previous samples from MW17, was detected at an estimated concentration of 1.6 µg/l in the sample from MW17 during September 2004.
- Interior wells: Benzene and chloroethane were detected in samples collected from several interior wells. Concentrations of benzene in the samples collected from wells MW48 and MW49 remained elevated (890 µg/l and 90 µg/l, respectively), but were below the maximum baseline concentrations for these wells. The concentration of chloroethane in the sample from well MW19 (27 µg/l) exceeded the maximum baseline concentration (20 µg/l) for this well. No other detections in interior wells exceeded baseline concentrations. Benzene and chloroethane were detected at trace, estimated concentrations in the sample collected at well MW06, and benzene and chloroethane were not detected in the sample collected from MW45.
- Downgradient wells: No VOCs were detected in samples from downgradient wells in the upper aquifer, except in the sample from MW15, where benzene and chloroethane were detected at concentration of 7.7 µg/l and 1.9 µg/l, respectively. Well MW15 is located downgradient of the Town of Griffith Landfill.

- Tentatively Identified Compounds: A few tentatively identified compounds (TICs) were detected in the sample from upper aquifer wells MW15, MW17, MW19, and MW45. Ethyl ether, detected in some samples from lower aquifer wells, was detected in the samples from MW15 (7.3 μg/l) and MW19 (8.7 μg/l). Other TICs included 4-ethenylcyclohexane, chloro-fluoromethane, alkanes, and various benzene-related compounds.

3.2.2 Lower Aquifer Results

Table 5 summarizes the indicator VOC results in the samples from 16 lower aquifer wells collected during September 2004. **Figure 4** shows the well locations and detected indicator VOCs on a map of the ACS Site. Graphs presenting the concentrations of benzene and chloroethane versus time for the lower aquifer monitoring wells are presented in **Appendix B**. The laboratory analytical reports and validation narrative for samples from the lower aquifer are provided in **Appendix C**.

VOC Results

In the past, benzene and chloroethane have been detected in the samples collected from lower aquifer monitoring wells MW09, ATMW4D, and MW10C. Failure of the surface seal at MW09 and ATMW4D probably provided the path which allowed benzene and chloroethane to migrate locally into the lower aquifer. These wells have been properly abandoned and replaced by MW09R and MW56. It is unclear if detections in samples from MW10C and MW53 are a downgradient indication of the migration from MW09 or ATMW4D. A lower aquifer investigation is being conducted to address this uncertainty.

- Upgradient well: No VOCs were detected in the sample collected from lower aquifer monitoring well MW28, located south of the site.
- Interior wells: Benzene and chloroethane were the only indicator VOCs detected in the samples collected from interior wells MW09R, MW10C, MW29, and MW56. Concentrations of benzene in the sample collected from MW10C (190 μg/l) and chloroethane in the sample collected from MW29 (54 μg/l) exceeded maximum baseline concentrations during September 2004. No other concentrations exceeded their maximum baseline concentrations.
- Downgradient wells: VOCs were detected in samples collected from two downgradient monitoring wells during September 2004. Benzene was detected in the sample collected from MW53 (8.9 μg/l), and tetrachloroethene was detected at trace levels in the sample collected from MW30. Both of these results were below the maximum baseline concentrations for these wells.
- Tentatively Identified Compounds: A few TICs were detected in the samples from lower aquifer wells

MW10C, MW23, MW33, MW51, MW52, MW53, and MW56. Ethyl ether was detected in samples from MW10C (760 µg/l), MW23 (8.9 µg/l), MW51 (1,500 µg/l), MW52 (2,100 µg/l), and MW56 (5.8 µg/l). Other TICs include 1,4 dioxane, 1,3-dioxolane, tetrahydrofuran, dimethoxymethane, and alkanes.

3.2.3 Discussion

The Site source areas are currently contained within the barrier wall which is limiting migration of contaminants to adjacent areas in the upper aquifer. The groundwater monitoring program is structured specifically to monitor groundwater outside the barrier wall.

Upper Aquifer

VOCs

North of the Site, sampling results since 1997 from interior wells MW48 and MW49 continue to show generally decreasing concentration trends. Years of monitoring data at these wells show that concentrations fluctuate on a seasonal pattern, with concentrations being higher during the summer and fall months and lower when sampled in winter and spring. The September 2004 benzene concentration in the sample from MW48 (890 µg/l) increased slightly since March 2004 (590 µg/l); however it is lower than the concentration from the previous fall sample (September 2003, 1,800 µg/l). The benzene concentration in the sample from MW49 (90 µg/l) is the lowest detected in samples from this well in the past several years. Chloroethane concentrations in the samples from MW48 and MW49 during September 2004 were consistent with previous events.

Several of the upper aquifer monitoring wells located south of the Site also exhibit seasonal variability. Concentrations in samples from MW06 are generally higher when sampled in the winter and spring months and lower when sampled in the summer and fall months. The September 2004 benzene concentration in the sample from MW06 (2.7 µg/l) is lower than the concentration from the previous fall sample (September 2003, 39 µg/l), as well as being lower than the sample collected in March 2004 (980 µg/l).

Variable concentrations are also seen in samples collected from interior well MW19, located 500 feet downgradient of MW06. While the benzene concentrations in samples from this well have been below 5 µg/l over the last few sampling events, the chloroethane concentrations have remained at or above the maximum baseline concentration for this well (20 µg/l). In contrast, benzene and chloroethane concentrations in samples collected from interior well MW45, located 1000 feet downgradient of MW06, show decreasing concentration trends over the last several

years. Benzene and chloroethane concentrations have been at or below 5 μg/l during the last few sampling events, and were not detected in the sample collected from MW45 during September 2004. This decreasing concentration trend at MW45 is clearly shown in the graph in **Appendix B**.

Tetrachloroethene was detected at a trace amount in the sample from MW17 during September 2004. Tetrachloroethene and trichloroethene have occasionally been detected at trace amounts in samples collected from this well during previous sampling events. Benzene and chloroethane have not historically been detected in samples collected from this well, which was located downgradient from the Kapica-Pazmey area prior to installation of the barrier wall. After installation of the barrier wall, the local groundwater gradient reversed in this area causing well MW17 to be situated upgradient of the Site. This well replaced upgradient well MW18 in the monitoring well network, after MW18 became obstructed and was abandoned in March 2002.

Several chlorinated VOCs were detected in the sample from upgradient well MW11 during March 2004. These compounds were not detected in the sample collected from this well during September 2004.

Trace amounts of VOCs have occasionally been detected at some downgradient wells. However, the concentrations at these downgradient wells generally:

- Are below maximum baseline concentrations,
- Show decreasing trends, or
- Are only occasionally detected.

Data from upper aquifer monitoring wells indicate that VOC contamination has not spread beyond historical limits. Perimeter monitoring wells have been generally free of benzene and chloroethane detections and concentrations within the plume have generally been decreasing.

MWH is currently conducting an In-Situ Chemical Oxidation (ISCO) treatment of residual hydrocarbons near the intersection of Colfax and Reder. These residual hydrocarbons are believed to be feeding the groundwater plume observed south of the Site in samples collected from wells MW06, MW19, and MW45. The first phase of the full-scale treatment was completed in September 2004. The second treatment event is anticipated to start in March 2004.

Lower Aquifer

VOCs

In the lower aquifer, the groundwater results continue to show isolated detections, apparently related to localized effects. Before MW09 was replaced, samples collected from it contained concentrations of benzene and chloroethane as high as 290 and 2,900 μg/l, respectively. Since MW09R replaced MW09, the benzene and

chloroethane concentrations have decreased to the current concentrations of 6.5 and 11 µg/l, respectively. These concentrations are the lowest at this location since MW09R was installed.

Nested with well MW09R are MW29 and MW34. MW09R is screened in the upper portion of the lower aquifer, and MW29 and MW34 are screened in the middle and lower part of the lower aquifer, respectively. Chloroethane concentrations in samples collected from well MW29 have gradually increased over the last several sampling events and have exceeded maximum baseline concentrations since September 2002. The increase in chloroethane concentrations in samples from MW29 is likely due to diffusion because of a concentration gradient between this well and MW09R. Chloroethane has been detected as high as 680 µg/l in samples from MW09R as recently as September 2001. Benzene and chloroethane have not been detected in samples from well MW34, which is screened at the bottom of the lower aquifer.

The concentration of benzene in the sample collected from MW10C decreased from 980 µg/l in March 2004 to 190 µg/l in September 2004. Benzene concentrations have decreased in samples collected from MW10C since benzene was detected at a concentration of 4,800 µg/l in March 2003. The concentration of benzene in the sample collected from MW56 (1,100 µg/l) was higher than in March 2004, but is consistent with previous concentrations.

In response to consistently elevated benzene concentrations in samples collected from interior wells MW10C and MW56, a purging system was installed at these wells and has been operating since October 2002. This system extracts groundwater at a rate of about two gallons per minute at each well, and the water is directed to the groundwater treatment plant where it is treated and discharged to the wetlands. Flow meters installed at each well are inspected regularly to provide a measure of the gallons pumped. As of the end of September 2004, the system has pumped about 2,860,000 gallons of groundwater from these wells (**Appendix D**). These low-rate extraction pumps operating in MW10C and MW56 may be a factor in the variability observed in VOC concentrations in samples collected from these wells.

In samples collected from downgradient well MW53, located along the northern boundary of the Site northwest of the ACS facility, benzene concentrations have increased gradually from below detection limits in 1997 to 11 µg/l in March 2004. The concentration of benzene in the sample collected during September 2004 decreased slightly to 8.9 µg/l, but is in the range of previous concentrations. Historical groundwater elevations indicate a very small downward gradient at this location. It is unclear if the benzene concentrations in samples collected from MW53 are hydraulically connected to the

detections in samples collected from MW10C or MW09R, which are screened higher in the lower aquifer.

To determine if the increasing concentration trends in samples collected from MW53 are related to the elevated concentrations of benzene detected in samples from MW10C or MW56, or from historical detections at MW09R, MWH proposed an investigation to collect groundwater data from the lower aquifer. With the Agencies approval, MWH conducted the first phase of this work in November 2004. The results of this investigation and recommendations for the next phase of activities are being prepared and will be presented in a separate report.

3.3 RESIDENTIAL WELL ANALYTICAL DATA

The following five residential wells were sampled during September 2004:

Well Identity	Street Address
PW-A	1007 Reder Road
PW-C	1009 Reder Road
PW-D	1029 Reder Road
PW-Re	1130 Reder Road
PW-T	1043 Reder Road

The locations of the five residences are shown on **Figure 5**. The samples were analyzed for low-concentration organics (VOCs, SVOCs, PCBs, and pesticides) and inorganics (metals and cyanide).

A few VOCs were detected at trace concentrations in samples collected from the residential wells (**Table 6**). The resident at 1007 Reder Road (PW-A) mentioned to the MWH sampling crew that her well was recently disinfected with bleach. The detections of bromodichloromethane and chloroform in the sample collected from PW-A may be by-products of this bleach treatment. No detected compounds were in exceedance of MCLs.

One SVOC, bis(2-ethylhexyl)phthalate, was detected at a concentration of 4.8 µg/l in the sample collected from residential well PW-T. This concentration is below the MCL of 6 µg/l for this compound. One pesticide, 4,4'-DDT, was detected at a trace concentration of 0.01 µg/l in the sample collected from residential well PW-A. No other SVOC, PCB, or pesticide was detected in samples collected from the residential wells during September 2004.

Several inorganic analytes were detected in the residential well samples. **Table 7** provides the detected inorganic results along with the related MCLs, laboratory method detection limits (MDLs), and practical quantitation limits (PQLs, or reporting limits). All detections were generally similar to concentrations detected during previous residential sampling events. The concentration of lead in the sample collected at PW-C (20.7 µg/l)

exceeded the MCL of 15 μg/l; however, lead was not detected above 3 μg/l in the duplicate sampled collected from this well. Lead was also detected in a laboratory preparation blank and a continuing calibration blank associated with this sample; thus, the detection may be related to the detection of lead in these blank samples. Lead has not been detected in samples collected from this residential well in the past several years.

SECTION 4.0 – CONCLUSIONS

The September 2004 water levels and groundwater samples were collected from wells at the ACS Site to meet the following objectives from the revised LTGMP:

1. **Collect water level data to confirm that groundwater flow regimes in the upper and lower aquifers are consistent with historical flow patterns.**

   The groundwater flow regimes determined from September 2004 data are consistent with past conditions for both the upper and lower aquifers.

2. **Collect water level data to confirm that the Barrier Wall Extraction System (BWES) and Perimeter Groundwater Containment System (PGCS) are affecting the upper aquifer hydraulic gradients as planned.**

   The data indicate the barrier wall is containing the groundwater enclosed within the wall. The regional groundwater flow from the east is diverted toward the north and south around the barrier wall. The groundwater diverted to the north is collected in the PGCS extraction trench. Groundwater diverted south flows along the barrier wall and continues to the south and southeast. These results are consistent with previous observations.

3. **Collect and analyze groundwater samples from upgradient monitoring wells in the upper and lower aquifers to confirm background ground water quality.**

   There were no detections of benzene or chloroethane in samples from upgradient monitoring wells in both the upper and lower aquifer wells. A trace amount of tetrachloroethene was detected in upper aquifer well MW17, but this detection does not represent an increasing trend.

4. **Collect and analyze groundwater samples from upper and lower aquifer monitoring wells to provide indication of any changes in groundwater quality at downgradient boundaries.**

   In the upper aquifer, benzene and chloroethane were detected in the sample collected from downgradient monitoring well MW15. This well is located downgradient of the Griffith Landfill. The plot of data points does not exhibit an increasing trend. VOCs were not detected in any other downgradient upper aquifer well.

   Benzene was detected in the sample collected from monitoring well MW53 screened in the lower aquifer. Benzene concentrations have gradually increased in

samples collected from MW53 during the last several sampling events. A lower aquifer investigation is currently being conducted to evaluate this trend. A trace amount of tetrachloroethene was detected in lower aquifer well MW30, but this detection does not appear to represent an increasing trend.

Sample results from residential wells located east of the Site continue to demonstrate that no Site-related contamination has impacted these wells.

5. **Collect and analyze groundwater samples from the interior of the areas of contaminated groundwater to document how concentrations change with time as the remediation progresses.**

Sampling data from the upper aquifer indicate that concentrations within plume areas outside the barrier wall continue to decrease. The concentrations of benzene and chloroethane in samples from interior wells MW06, MW45, MW48, and MW49 have decreased over the last several years. These decreasing trends in the upper aquifer are likely the combined result of the barrier wall, the PGCS, and the ORC treatments in these areas. Concentrations of chloroethane in samples from MW19 have fluctuated near the maximum baseline concentration for this well.

In samples collected from lower aquifer interior wells, concentrations of benzene and chloroethane continue to be variable. Concentrations of benzene and chloroethane in samples from MW09R have shown decreasing trends, while chloroethane concentrations in samples from adjacent nested well MW29 have continued to slowly increase. Benzene and chloroethane concentrations in the sample collected from MW10C have decreased but have remained elevated in samples from MW56. A purging system is operating at MW10C and MW56 to capture impacted groundwater and prevent its migration in the lower aquifer.

Corrective Actions

According to the LTGMP, MWH is to propose corrective actions for analytical results that exceed maximum baseline concentrations or that demonstrate increasing trends. The following lists the exceedances (underlined) and the corrective action taken:

- Baseline exceedance in the sample collected from well MW19: MWH will continue monitoring the chloroethane concentration at well MW19 as described in the LTGMP.

- Baseline exceedance and increasing chloroethane concentrations in samples collected from well MW29: MWH will continue monitoring the chloroethane concentration at well MW29 as described in the LTGMP.

- Baseline exceedances or increasing concentrations in samples collected from MW10C, MW53, and MW56: MWH is currently conducting a lower aquifer investigation to determine the source and potential migration pathway of the benzene detections observed in samples from these wells.

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Tables

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Table 1
Groundwater Elevation Data - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Monitoring Point Designation	Reference Points			September 20, 2004		Notes
	East	North	TOC	Level	Elevation	
Upper Aquifer Monitoring Wells						
MW06	5298	5520	655.28	23.59	631.69	
MW11	6377	7329	640.47	8.93	631.54	
MW12	6019	6352	642.74	10.62	632.12	
MW13	5050	7814	634.08	4.58	629.50	
MW14	4882	6995	638.56	10.75	627.81	
MW15	4721	5003	637.89	7.11	630.78	
MW17	5656	5677	647.10	15.17	631.93	
MW19	5231	4943	635.78	4.90	630.88	
MW37	5395	7976	636.78	7.52	629.26	
MW38	5903	8216	636.51	7.85	628.66	
MW39	6253	7947	637.77	7.75	630.02	
MW40	6349	6831	639.46	7.65	631.81	
MW41	6242	4517	632.74	5.66	627.08	
MW42	6264	3808	632.32	7.45	624.87	
MW43	5880	3719	633.56	7.89	625.67	
MW44	5390	4303	633.04	4.97	628.07	
MW45	5830	4388	635.35	6.42	628.93	
MW46	4526	7424	633.32	3.15	630.17	
MW47	5958	5084	640.54	8.41	632.13	
MW48	5669	7814	636.36	7.01	629.35	
MW49	5551	7650	637.00	7.41	629.59	
M4S	4953	6537	633.42	5.16	628.26	

Notes:

All depth measurements and elevations are in units of feet. TOC = top of casing

Elevation is in feet above mean sea level.

Table 1
Groundwater Elevation Data - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Monitoring Point Designation	Reference Points			September 20, 2004		Notes
	East	North	TOC	Level	Elevation	
Staff Gauges & Piezometers						
P13	4878	5735	651.20	19.37	631.83	
P17	4584	6006	654.64	24.12	630.52	
P23	4689	7018	636.18	7.62	628.56	
P25	5131	7510	635.01	6.49	628.52	
P26	4764	7309	634.23	6.23	628.00	
P27	4904	7020	639.70	11.43	628.27	
P28	5883	7486	644.53	13.78	630.75	
P31	5480	7159	641.03	DRY	DRY	
P32	5746	7026	642.32	12.65	629.67	
P36	5410	6851	645.89	DRY	DRY	
P40	5931	7241	638.77	7.25	631.52	
P41	5663	7377	637.23	6.20	631.03	
P49	5145	6949	638.98	9.66	629.32	
SG8R	5409	5252	634.70	2.60	632.10	
SG8R2	5409	5242	632.67	NM	NM	Not measured since SG8R was measured.
SG5	5464	7713	633.36	DRY	DRY	
SG13	4819	7209	631.53	4.5	630.0	TOC is the 6.0' mark on staff gauge
SG14	5109	6523	635.44	DRY	DRY	TOC is the 6.0' mark on staff gauge
PGCS Piezometer Sets						
P81	5577	7581	636.19	DRY	DRY	Damaged; hit by vehicle and possibly filled with sediment.
P82	5577	7572	635.77	6.99	628.78	
P83	5577	7561.6	635.95	6.52	629.43	
P84	5322	7603	634.35	5.77	628.58	
P85	5326	7594	634.08	5.48	628.60	
P86	5329	7585	634.41	5.80	628.61	
P87	5121	7466	633.88	5.37	628.51	Lock replaced
P88	5130	7460	633.90	5.46	628.44	Lock replaced
P89	5137	7454	634.02	5.62	628.40	Lock replaced
P90	4881	7152	634.45	5.68	628.77	
P91	4889	7145	634.59	6.04	628.55	
P92	4896	7138.1	633.87	5.21	628.66	

Notes:

All depth measurements and elevations are in units of feet. TOC = top of casing

Elevation is in feet above mean sea level.

Table 1
Groundwater Elevation Data - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Monitoring Point Designation	Reference Points			September 20, 2004		Notes
	East	North	TOC	Level	Elevation	
BWES Water Level and Piezometer Pairs						
P93	5136	7067	638.79	CNM	CNM	Does not exist - Scheduled to be replaced in 2004
P94	5146	7061	638.98	CNM	CNM	Does not exist - Scheduled to be replaced in 2004
P95	5146	6532	638.58	10.30	628.28	
P96	5156	6537	641.26	12.87	628.39	
P105	5885	6678	638.86	6.71	632.15	
P106	5871	6685	638.10	8.81	629.29	
P107	5766	7339	637.42	6.00	631.42	
P108	5757	7324	638.13	8.00	630.13	
P109	5740	6387	644.30	12.00	632.30	Lock replaced
P110	5705	6382	647.68	19.72	627.96	
P111	5551	5950	650.03	17.80	632.23	Lock replaced
P112	5525	5960	653.36	25.99	627.37	
P113	5309	5693	657.53	30.14	627.39	
ORCPZ102	5331	5612	652.47	20.68	631.79	
P114	5035	5729	653.69	25.98	627.71	
P115	4970	5708	652.50	19.10	633.40	
P116	5031	6087	646.26	18.48	627.78	
P117	5014	6087	643.93	13.84	630.09	Missing Well Plug replaced
P118	5402	6539	645.52	17.90	627.62	

Notes:

All depth measurements and elevations are in units of feet.
Elevation is in feet above mean sea level.

TOC = top of casing
CNM = could not measure (reason given under "Notes" column)

Table 1
Groundwater Elevation Data - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Monitoring Point Designation	Reference Points			September 20, 2004		Notes
	East	North	TOC	Level	Elevation	
Lower Aquifer Wells						
MW07	6113	6732	641.46	20.90	620.56	
MW08	5934	7506	640.43	20.21	620.22	
MW09R	4893	6990	639.05	18.51	620.54	
MW10C	5229	7554	635.71	CNM	CNM	Could not measure due to pump in well
MW23	4717	7404	633.31	12.69	620.62	
MW24	4596	8033	635.22	14.98	620.24	
MW28	5657	5695.6	648.77	27.84	620.93	
MW50	5269	5383	649.43	28.47	620.96	
MW51	5198	7767	634.16	13.96	620.20	
MW52	4996	7814	632.74	12.42	620.32	
MW54R	5589.8	7592.2	637.51	17.06	620.45	
M4D	4949	6538	633.32	12.78	620.54	

Notes:

All depth measurements and elevations are in units of feet.
Elevation is in feet above mean sea level.

TOC = top of casing
CNM = could not measure (reason given under "Notes" column)

Table 2
Field Parameter Data - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Well ID	pH (std. units)	Electrical Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)
Upper Aquifer Monitoring Wells						
MW06	6.88	3.1	17.7	11	0.0	-48
MW11	5.08*	0.40	14.5	76	0.0	31
MW14	6.76	0.53	17.7	19	2.8	115
MW15	7.13	3.2	16.5	16	0.1	-116
MW17	5.47*	0.82	16.0	14	0.0	-46
MW19	7.30	5.1	17.9	29	0.0	-160
MW42	6.50	1.0	17.6	14	2.3	42
MW43	6.67	0.77	18.3	68	1.2	-78
MW44	7.22	0.89	17.2	5	0.1	-116
MW45	6.95	0.95	20.0	24	2.3	-116
MW48	6.90	1.4	17.1	24	0.5	-109
MW49	6.82	1.5	16.7	13	0.4	-117
Residential Wells						
PW-A	7.39	0.99	14.7	6	0.0	-132
PW-C	7.31	1.0	16.2	1	0.0	-150
PW-D	7.40	0.92	16.9	9	5.0	-138
PW-T	7.36	0.9	18.0	11	0.0	-144
PW-Re	7.36	0.99	16.6	9	0.0	-128

Notes:

Values are those recorded upon stabilization during groundwater purging

mS/cm = milliSiemens per centimeter

°C = Degrees Centrigrade

NTU = nephelometric turbidity units

mg/L = milligrams per liter

mV = millivolts

* pH probe used for these wells was determined to have a faulty span calibration (pH standard of 7 gave reading of 5.8)

Table 2
Field Parameter Data - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Well ID	pH (std. units)	Electrical Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)
Lower Aquifer Monitoring Wells						
MW08	5.82*	0.49	13.0	72	0.0	-160
MW09R	7.56	1.2	14.9	56	0.0	-182
MW10C	7.27	1.3	13.5	13	0.0	-162
MW23	5.69*	1.7	13.0	7	0.0	-119
MW28	5.87*	0.91	14.1	21	0.0	-138
MW29	7.12	1.0	13.6	9	0.0	-133
MW30	7.38	1.1	13.9	11	6.7	-170
MW31	5.83*	0.79	13.0	7	0.0	-144
MW32	5.83*	0.87	12.8	8	0.0	-151
MW33	6.97	2.1	13.6	9	1.3	-109
MW51	7.27	1.6	15.0	74	1.9	-130
MW52	7.15	2.2	14.9	52	0.1	-133
MW53	6.79	3.8	12.9	51	0.6	-107
MW54R	7.59	1.1	14.0	430	0.4	-179
MW55	7.38	1.3	13.2	45	1.5	-130
MW56	7.24	1.1	17.5	7	0.0	-175

Notes:

Values are those recorded upon stabilization during groundwater purging

mS/cm = milliSiemens per centimeter

°C = Degrees Centrigrade

NTU = nephelometric turbidity units

mg/L = milligrams per liter

mV = millivolts

* pH probe used for these wells was determined to have a faulty span calibration (pH standard of 7 gave reading of 5.8)

Table 3
Summary of Groundwater Sampling Activities - September 2004
American Chemical Service, Inc. NPL Site
Griffith, Indiana

Monitoring Well ID	Location with Respect to Area of Groundwater Contamination	Date Sampled	Indicator VOCs	Quality Control Sample ID	Date Redeveloped	Tubing Replaced	Notes
Upper Aquifer Monitoring Wells							
MW06	Interior	9/27/04	X	MS/MSD	9/17/04	No	Lock replaced
MW11	Upgradient	9/21/04	X		3/17/04	3/17/04	
MW12	Upgradient	NS	NS		3/17/04	3/17/04	
MW13	Downgradient[1]	NS	NS		9/16/04	9/16/04	Top of casing filed to remove sharp edge
MW14	Downgradient	9/24/04	X		9/16/04	No	Top of casing filed to remove sharp edge
MW15	Downgradient	9/23/04	X		9/16/04	9/16/04	New lock; top of casing filed down
MW17	Upgradient	9/21/04	X	DUP01, MS/MSD	3/12/2002[2]	No	
MW19	Interior	9/24/04	X		9/17/04	No	
MW37	Downgradient	NS	NS		9/16/04	No	Top of casing filed to remove sharp edge
MW39	Transgradient	NS	NS		9/16/04	9/16/04	New lock; top of casing filed down
MW42	Downgradient	9/23/04	X		9/16/04	9/16/04	Top of casing filed to remove sharp edge
MW43	Downgradient	9/23/04	X		9/16/04	9/16/04	Top of casing filed to remove sharp edge
MW44	Downgradient	9/23/04	X		3/12/04	3/12/04	Top of casing filed to remove sharp edge
MW45	Interior	9/23/04	X	DUP02	9/16/04	No	Top of casing filed to remove sharp edge
MW48	Interior	9/27/04	X	DUP03	9/17/04	No	New lock; top of casing filed down
MW49	Interior	9/27/04	X		9/17/04	No	New lock; top of casing filed down

Notes:

[1] - MW13 was originally an interior well.

[2] - MW17 was redeveloped in March of 2002 when it replaced MW18 in the monitoring well network.

Indicator Volatile Organic Compounds (VOCs) - Includes the parameters 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, benzene, chloroethane, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, trans-1,2-dichloroethene, and vinyl chloride.

X - Indicates sample was analyzed for selected parameter.

NS - Not sampled during this event.

MS/MSD - Matrix spike/Matrix spike duplicate

DUP - Duplicate

Table 3
Summary of Groundwater Sampling Activities - September 2004
American Chemical Service, Inc. NPL Site
Griffith, Indiana

Monitoring Well ID	Location with Respect to Area of Groundwater Contamination	Date Sampled	Indicator VOCs	Low-Level VOCs	Low-Level SVOCs	Low-Level PCBs/Pesticides	Metals and Cyanide	Quality Control Sample ID
Lower Aquifer Monitoring Wells								
MW08	Downgradient	9/21/04	X					
MW09R	Interior	9/24/04	X					
MW10C	Interior	9/27/04	X					
MW23	Downgradient	9/21/04	X					
MW28	Upgradient	9/21/04	X					
MW29	Interior	9/24/04	X					
MW30	Downgradient	9/22/04	X					
MW31	Downgradient	9/21/04	X					
MW32	Downgradient	9/21/04	X					
MW33	Downgradient	9/22/04	X					
MW51	Downgradient	9/22/04	X					
MW52	Downgradient	9/22/04	X					
MW53	Downgradient	9/22/04	X					
MW54R	Downgradient	9/22/04	X					
MW55	Downgradient	9/22/04	X					
MW56	Interior	9/24/04	X					
Residential Wells								
PW-A	Upgradient	9/27/04		X	X	X	X	
PW-C	Upgradient	9/28/04		X	X	X	X	
PW-D	Upgradient	9/27/04		X	X	X	X	PWDUP, MS/MSD
PW-T	Upgradient	9/27/04		X	X	X	X	
PW-Re[3]	Upgradient	9/27/04		X	X	X	X	

Notes:

X - Indicates sample was analyzed for selected parameter.

Indicator Volatile Organic Compounds (VOCs) - Includes the parameters 1,1-dichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, benzene, chloroethane, cis-1,2-dichloroethene, tetrachloroethene, trichloroethene, trans-1,2-dichloroethene, and vinyl chloride.

SVOCs - Semi-Volatile Organic Compounds

PCBs - Poly-chlorinated biphenyls

MS/MSD - Matrix spike/Matrix spike duplicate

DUP - Duplicate

[3] - Sample was labeled PW-Z. Residential well later determined to be PW-Re.

Table 4
Summary of Organic Compound Detections in Samples from Upper Aquifer Monitoring Wells - September 2004
American Chemical Service NPL Site
Griffith, Indiana

	MW06			MW11			MW14			MW15			MW17			MW19		
	Interior			Upgradient			Downgradient			Downgradient			Upgradient			Interior		
Analyte	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*
Volatile Organic Compounds																		
1,1-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,1-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,2-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Benzene	**2.7**	J/J	*320*	5	U/U		5	U/U		**7.7**		*10*	5	U/U		5	U/U	
Chloroethane	**2.5**	J/J	*720*	5	U/U		5	U/U		**1.9**	J/J	*10*	5	U/U		**27**		*20*
cis-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Tetrachloroethene	5	U/UJ		5	U/U		5	U/UJ		5	U/UJ		**1.6**	J/J	*10*	5	U/UJ	
trans-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Trichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Vinyl Chloride	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	

Notes:

All concentrations in micrograms per liter (ug/l)

BV = Baseline Value (only provided for detected compounds).

X/ = Data qualifier added by laboratory

/X = Data qualifier added by data validator

U = Compound was analyzed for but not detected

J = Estimated value; concentration is below reporting limit

UJ = Analyte is not detected and the indicated reporting limit is an estimated value

D = Results based on diluted sample

Bold result indicates the compound was detected

Bold and Boxed results indicates an exceedance of the compound's baseline value

Table 4
Summary of Organic Compound Detections in Samples from Upper Aquifer Monitoring Wells - September 2004
American Chemical Service NPL Site
Griffith, Indiana

	MW42			MW43			MW44			MW45			MW48			MW49		
	Downgradient			Downgradient			Downgradient			Interior			Interior			Interior		
Analyte	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*
Volatile Organic Compounds																		
1,1-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,1-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,2-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Benzene	5	U/U		5	U/U		5	U/U		5	U/U		**890**	D/	*9,500*	**90**		*6,750*
Chloroethane	5	U/U		5	U/U		5	U/U		5	U/U		**20**		*1,000*	**11**		*715*
cis-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Tetrachloroethene	5	U/UJ		5	U/UJ		5	U/UJ		5	U/UJ		5	U/U		5	U/U	
trans-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Trichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Vinyl Chloride	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	

Notes:

All concentrations in micrograms per liter (ug/l)

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X/ = Data qualifier added by laboratory

/X = Data qualifier added by data validator

U = Compound was analyzed for but not detected

J = Estimated value; concentration is below reporting limit

UJ = Analyte is not detected and the indicated reporting limit is an estimated value

D = Results based on diluted sample

Bold result indicates the compound was detected

Bold and Boxed results indicates an exceedance of the compound's baseline value

Table 5
Summary of Organic Compound Detections in Samples from Lower Aquifer Monitoring Wells - September 2004
American Chemical Service NPL Site
Griffith, Indiana

	MW08			MW09R			MW10C			MW23			MW28		
	Downgradient			Interior			Interior			Downgradient			Upgradient		
Analyte	**Sep-04**		***BV***	**Sep-04**		***BV***	**Sep-04**		***BV***	**Sep-04**		***BV***	**Sep-04**		***BV***
Volatile Organic Compounds															
1,1-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,1-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,2-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Benzene	5	U/U		**6.5**		*310*	**190**	D/	*150*	5	U/U		5	U/U	
Chloroethane	5	U/U		**11**		*2,900*	**160**		420	5	U/U		5	U/U	
cis-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Tetrachloroethene	5	U/U		5	U/UJ		5	U/UJ		5	U/U		5	U/U	
trans-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Trichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Vinyl Chloride	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	

Notes:

All concentrations in micrograms per liter (ug/l)

BV = Baseline Value (only provided for detected compounds)

NA - Not available

X/ = Data qualifier added by laboratory

/X = Data qualifier added by data validator

U = Compound was analyzed for but not detected

J = Estimated value; concentration is below reporting limit

UJ = Analyte is not detected and the indicated reporting limit is an estimated value

D = Results based on diluted sample

Bold result indicates the compound was detected

Bold and Boxed results indicates an exceedance of the compound's baseline value

Table 5
Summary of Organic Compound Detections in Samples from Lower Aquifer Monitoring Wells - September 2004
American Chemical Service NPL Site
Griffith, Indiana

	MW29			MW30			MW31			MW32			MW33		
	Interior			Downgradient			Downgradient			Downgradient			Downgradient		
Analyte	**Sep-04**		***BV***	**Sep-04**		***BV***	**Sep-04**		***BV***	**Sep-04**		***BV***	**Sep-04**		***BV***
Volatile Organic Compounds															
1,1-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,1-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
1,2-Dichloroethane	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Benzene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Chloroethane	**54**		*10*	5	U/U		5	U/U		5	U/U		5	U/U	
cis-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Tetrachloroethene	5	U/UJ		**1.1**	J/J	*10*	5	U/U		5	U/U		5	U/UJ	
trans-1,2-Dichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Trichloroethene	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	
Vinyl Chloride	5	U/U		5	U/U		5	U/U		5	U/U		5	U/U	

Notes:

All concentrations in micrograms per liter (ug/l)

BV = Baseline Value (only provided for detected compounds)

NA - Not available

X/ = Data qualifier added by laboratory

/X = Data qualifier added by data validator

U = Compound was analyzed for but not detected

J = Estimated value; concentration is below reporting limit

UJ = Analyte is not detected and the indicated reporting limit is an estimated value

D = Results based on diluted sample

Bold result indicates the compound was detected

Bold and Boxed results indicates an exceedance of the compound's baseline value

Table 5
Summary of Organic Compound Detections in Samples from Lower Aquifer Monitoring Wells - September 2004
American Chemical Service NPL Site
Griffith, Indiana

	MW51			MW52			MW53			MW54R			MW55			MW56		
	Downgradient			Downgradient			Downgradient			Downgradient			Downgradient			Interior		
Analyte	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*	Sep-04		*BV*
Volatile Organic Compounds																		
1,1-Dichloroethane	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	
1,1-Dichloroethene	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	
1,2-Dichloroethane	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	
Benzene	5	U/U		5	U/UJ		**8.9**		*10*	5	U/U		5	U/U		**1,100**	D/	*NA*
Chloroethane	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		**7.1**		*NA*
cis-1,2-Dichloroethene	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	
Tetrachloroethene	5	U/U		5	U/UJ		5	U/UJ		5	U/U		5	U/U		5	U/UJ	
trans-1,2-Dichloroethene	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	
Trichloroethene	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	
Vinyl Chloride	5	U/U		5	U/UJ		5	U/U		5	U/U		5	U/U		5	U/U	

Notes:

All concentrations in micrograms per liter (ug/l)

BV = Baseline Value (only provided for detected compounds)

NA - Not available

X/ = Data qualifier added by laboratory

/X = Data qualifier added by data validator

U = Compound was analyzed for but not detected

J = Estimated value; concentration is below reporting limit

UJ = Analyte is not detected and the indicated reporting limit is an estimated value

D = Results based on diluted sample

Bold result indicates the compound was detected

Bold and Boxed results indicates an exceedance of the compound's baseline value

Table 6
Summary of Organic Compound Detections in Samples from Residential Wells - September 2004
American Chemical Service NPL Site
Griffith, Indiana

Analyte	U.S. EPA MCL	PW-A			PW-C					PW-D			PW-Re			PW-T		
		Sep-04		RL	Sep-04		RL	PWDUP		RL	Sep-04		RL	Sep-04		RL	Sep-04		RL
Volatile Organic Compounds																			
Bromodichloromethane	NA	0.23	J/J	0.5		U/UJ	0.5		U/UJ	0.5		U/UJ	0.5		U/UJ	0.5		U/UJ	0.5
Carbon Disulfide	NA		U/UJ	0.5	0.11	J/J	0.5		U/UJ	0.5	0.66	/J	0.5		U/UJ	0.5		U/UJ	0.5
Chloroform	NA	0.35	J/J	0.5		U/UJ	0.5		U/UJ	0.5		U/UJ	0.5		U/UJ	0.5		U/UJ	0.5
Semi-Volatile Organic Compounds																			
Bis(2-ethylhexyl)phthalate	6		U/U	5		U/U	5		U/U	5		U/U	5		U/U	5	4.8	J/	5
PCBs/Pesticides																			
4,4'-DDT	NA	0.01	J/	0.02		U/U	0.02		U/U	0.02		U/U	0.02		U/U	0.02		U/U	0.02

Notes:
All results in micrograms per liter (ug/l)
Only detected compounds listed
Blank cell indicates compound not detected in that sample
PWDUP = Duplicate sample
PCBs = poly-chlorinated biphenyls
MCL = Maximum Contaminant Level
NA = MCL does not exist for this analyte
RL = Reporting Limit
X/ = Data qualifier added by laboratory
/X = Data qualifier added by validation
J = Estimated value; concentration detected is below reporting limit
U = Compound not detected above reporting limit.
UJ = Compound not detected above report limit; reporting limit is an estimated value

Table 7
Summary of Inorganic Results in Samples from Residential Wells - September 2004
American Chemical Services NPL Site
Griffith, Indiana

Analyte	U.S. EPA MCL	MDL (ug/l)	PQL (ug/l)	PW-A			PW-C						PW-D			PW-Re			PW-T		
				Sep-04	LQ	DV	Sep-04	LQ	DV	PWDUP	LQ	DV	Sep-04	LQ	DV	Sep-04	LQ	DV	Sep-04	LQ	DV
Aluminum	NA	80.7	200		U			U			U			U			U			U	
Antimony	6	1.9	10		U		3.6	B	UB		U			U			U			U	
Arsenic	50	2.1	10		U			U			U			U			U			U	
Barium	2,000	1.3	200	121	B		139	B		139	B		137	B		160	B		139	B	
Beryllium	4	0.1	5		U			U			U			U			U			U	
Cadmium	5	0.2	5		U			U			U			U			U			U	
Calcium	NA	12.3	5,000	81,400			81,900			82,400			88,700			84,300			89,300		
Chromium	100	0.9	5		U			U			U			U			U			U	
Cobalt	NA	0.5	5		U			U			U			U			U			U	
Copper	1,300	0.6	5	3.4	B	UB	111		B	1.8	B	UB	3.2	B	UB	1.3	B	UB		U	
Cyanide	200	1.1	10		U			U			U			U			U			U	
Iron	NA	12.2	100	1,900		B	2,200		B	2,160		B	1,890		B	1,650		B	2,330		B
Lead	15	1.1	3		U		20.7		B		U			U			U			U	
Magnesium	NA	3.9	5,000	41,800			44,800			45,100			45,900			45,800			48,200		
Manganese	NA	1.8	10	32.2			31.1			30.8			30.7			22.8			32.4		
Mercury	2	0.64	0.64		U			U			U			U			U			U	
Nickel	NA	0.6	40		U			U			U			U			U			U	
Potassium	NA	26.9	5,000	1,910	BE	J	1,950	BE	J	1,930	BE	J	1,890	BE	J	2,160	BE	J	2,110	BE	J
Selenium	50	2.4	5	2.4	UN	UJ	2.4	UN	UJ	2.4	UN	UJ	2.4	UN	UJ	2.4	UN	UJ	2.4	UN	UJ
Silver	NA	0.8	5		U			U			U			U			U			U	
Sodium	NA	154	5,000	21,400			18,300			18,200			18,400			24,200			20,600		
Thallium	2	2.8	10		U			U			U			U			U			U	
Vanadium	NA	0.6	20		U			U			U			U			U			U	
Zinc	NA	4.1	20		U		35.4				U		7.2	B			U		15.3	B	

Notes:
All results in micrograms per liter (ug/l)
A blank cell indicates parameter not detected
MCL = Maximum Contaminant Level
NA = MCL does not exist for this analyte
MDL = Method Detection Limit
PQL = Practical Quantitation Limit
LQ = Data qualifier added by laboratory
DV = Data qualifier added by validation
PWDUP - Duplicate sample

LQ Flags
U = Compound was not detected above the PQL
N = Sample spike recovery was outside of control limits
E = Serial dilution not within 10%. Concentration is estimated
B = Compound was detected above the MDL but below the PQL
It is considered an estimated concentration

DV Flags
B = Compound was detected in sample and in associated blank
J = Indicates an estimated value
UB = Compound not detected above indicated concentration due to blank contamination
UJ = Compound not detected, and detection limit is an estimated value

CAS/alc/jmf
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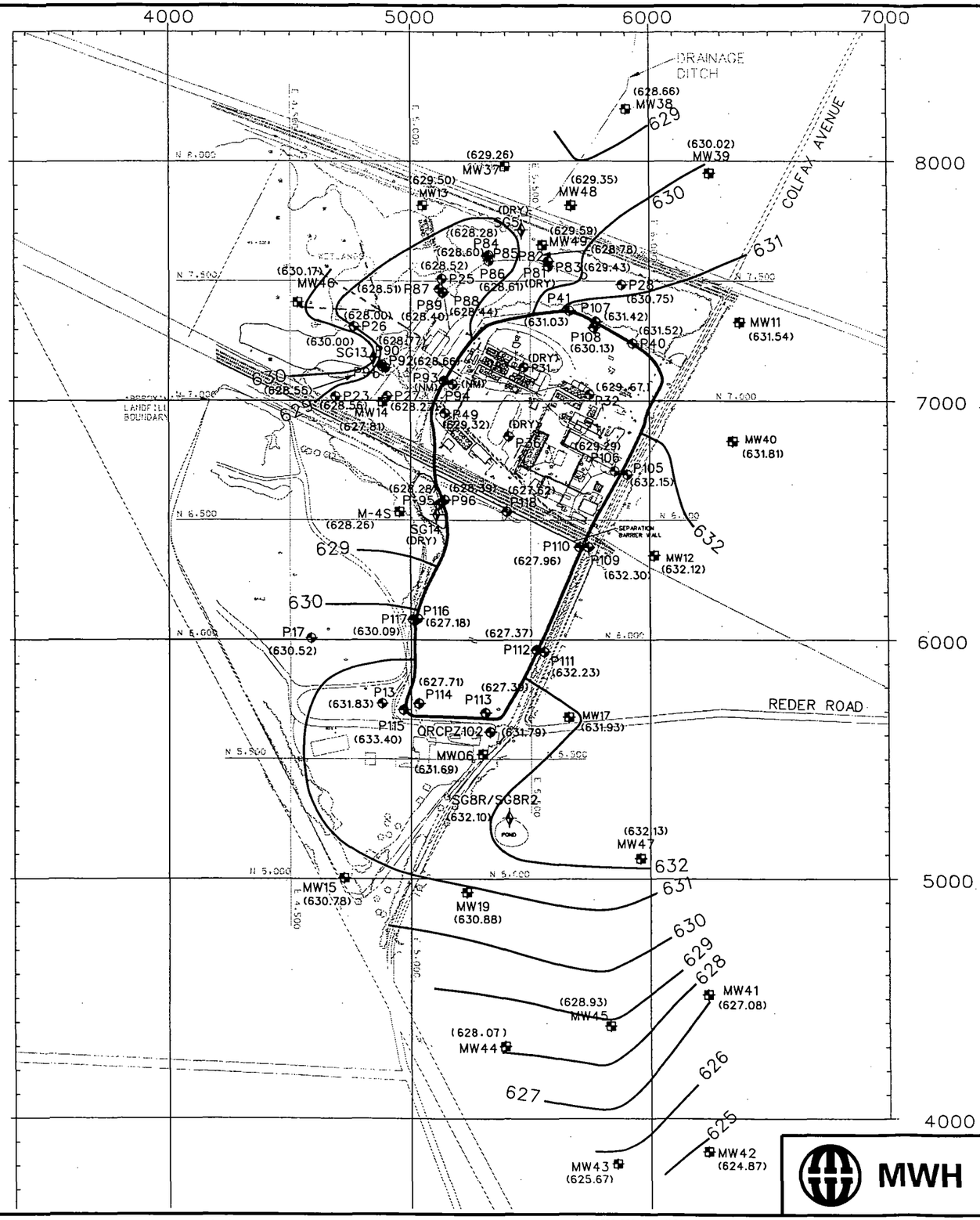
2090603.030501

Figures

MWH



LEGEND

———	BARRIER WALL
⊖	PERIMETER GROUND WATER CONTAINMENT SYSTEM
MW13	UPPER AQUIFER WELL LOCATION AND DESIGNATION
P61	PIEZOMETER LOCATION AND DESIGNATION
SG5	STAFF GAUGE LOCATION AND DESIGNATION
(632.42)	GROUNDWATER ELEVATION
631	GROUNDWATER ELEVATION CONTOUR (DASHED WHERE APPROXIMATE)
	INDICATES A DEPRESSION
(NM)	NOT MEASURED

NOTE:

1. P93 AND P94 WERE INSTALLED IN NOVEMBER 2004.
2. GROUNDWATER ELEVATIONS WERE MEASURED ON SEPTEMBER 20, 2004
3. ALL ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

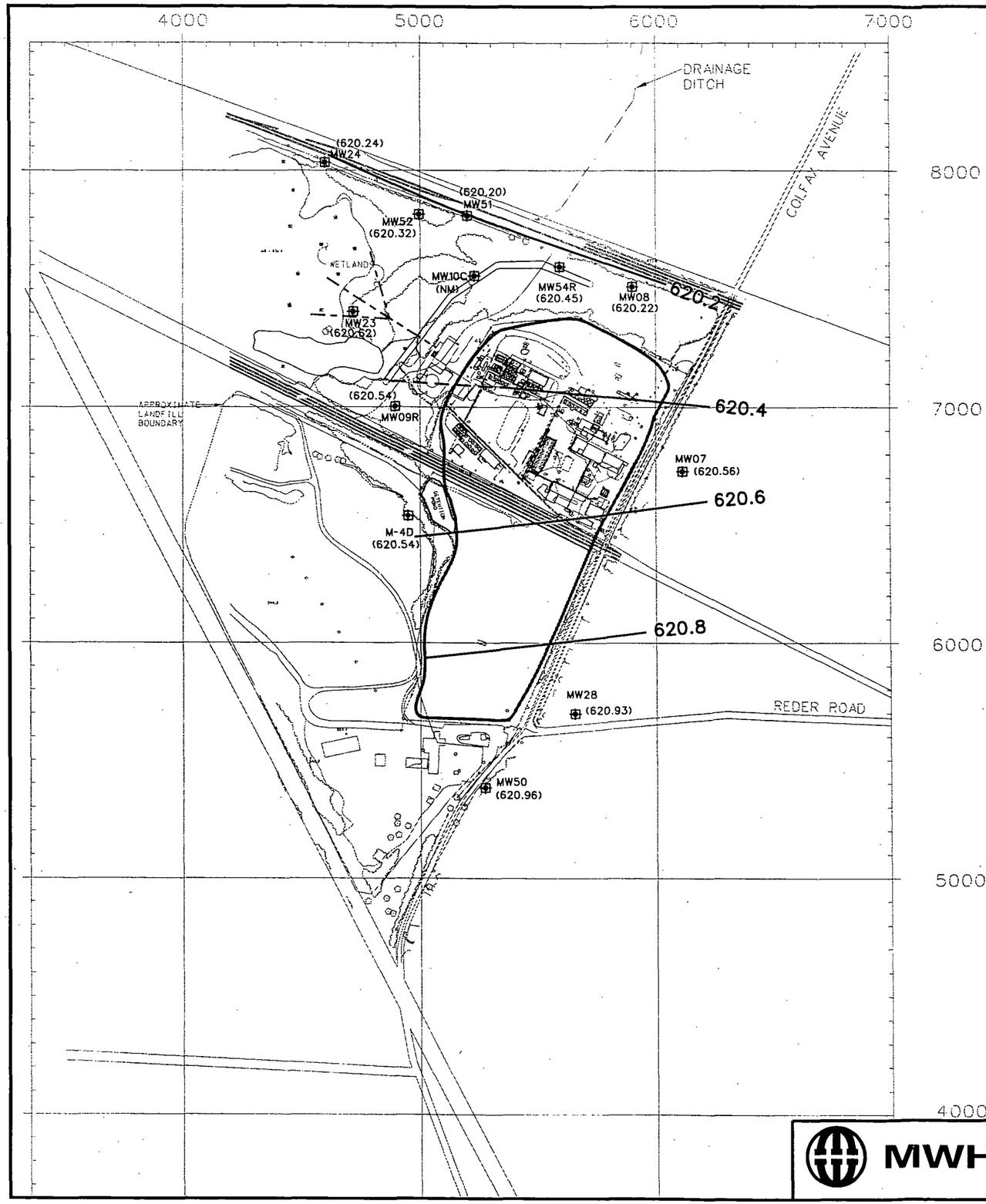
N

0 500 1000

SCALE IN FEET

MWH	SCALE	AMERICAN CHEMICAL SERVICE, INC. NPL SITE GRIFFITH, INDIANA	UPPER AQUIFER WATER TABLE CONTOUR MAP SEPTEMBER 2004	FIGURE
	AS SHOWN			1

JOB No. MW Job No. FILE: \\Uschi4s02\Warrenville\jobs\209\0603 ACS\Drawings\SEPT 04\Figure 1.dgn Plot Date: 16-DEC-2004 11:52 CAS/ALC



LEGEND

▬	BARRIER WALL
⊕ MW52	LOWER AQUIFER WELL LOCATION AND DESIGNATION
(622.60)	GROUNDWATER ELEVATION
— 623.0	GROUNDWATER ELEVATION CONTOUR (DASHED WHERE APPROXIMATE)
(NM)	NOT MEASURED

NOTES:

1. GROUNDWATER ELEVATIONS WERE MEASURED ON SEPTEMBER 20, 2004.
2. ALL ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

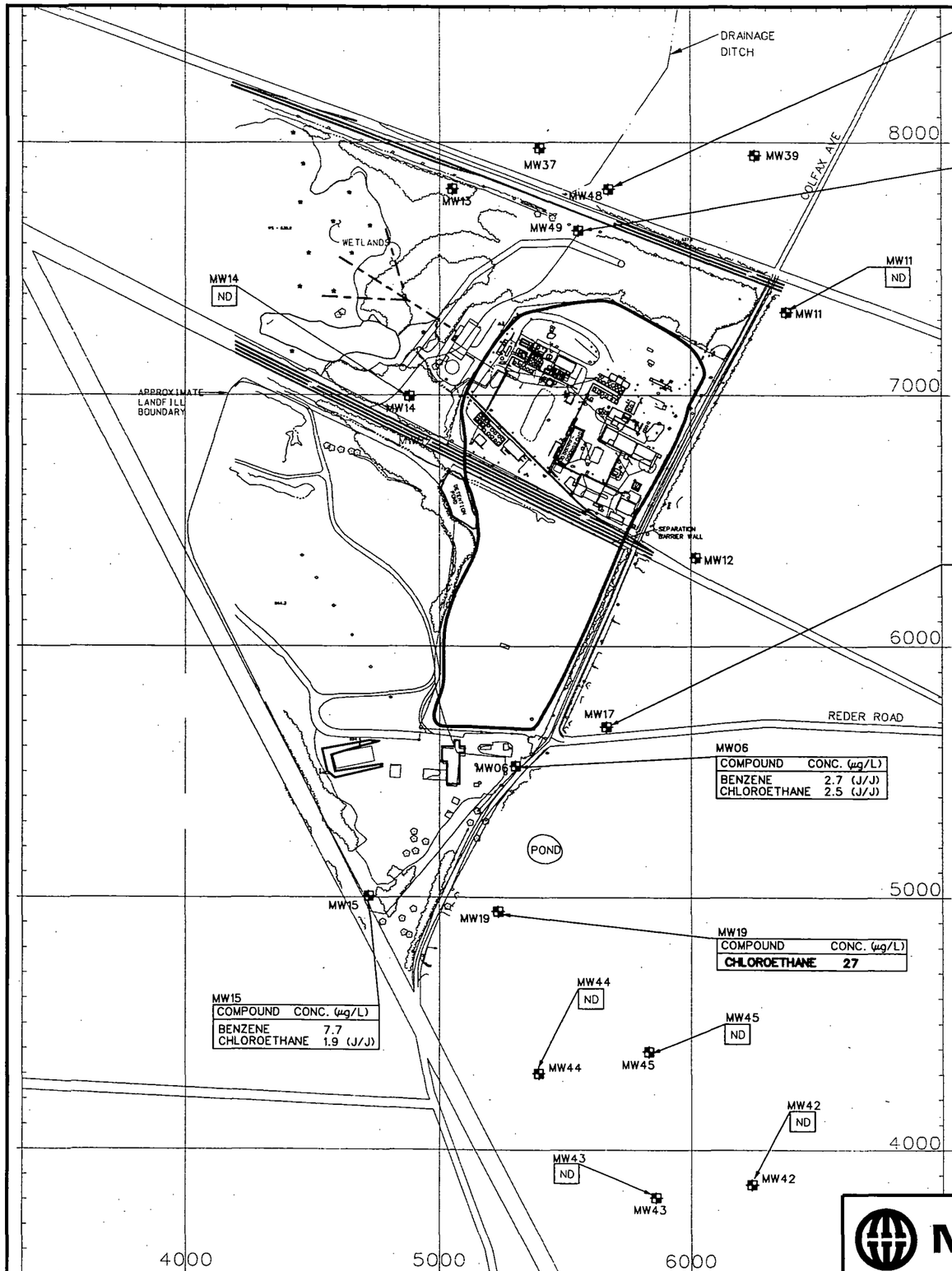
N

0 500 1000

SCALE IN FEET

MWH	SCALE	AMERICAN CHEMICAL SERVICE, INC. NPL SITE GRIFFITH, INDIANA	LOWER AQUIFER POTENTIOMETRIC SURFACE CONTOUR MAP SEPTEMBER 2004	FIGURE
	AS SHOWN			2

JOB No. MW Job No. FILE: \\Uschi4s02\Warrenville\jobs\209\0603 ACS\Drawings\SEPT 04\Figure 2.dgn Plot Date: 16-DEC-2004 11:55 CAS/ALC



MW48

COMPOUND	CONC. (µg/L)
BENZENE	890 (D/)
CHLOROETHANE	20

MW49

COMPOUND	CONC. µ g/L)
BENZENE	90
CHLOROETHANE	11

MW17

COMPOUND	CONC. (µg/L)
TETRACHLOROETHENE	1.6 (J/J)

MW06

COMPOUND	CONC. (µg/L)
BENZENE	2.7 (J/J)
CHLOROETHANE	2.5 (J/J)

MW19

COMPOUND	CONC. (µg/L)
CHLOROETHANE	**27**

MW15

COMPOUND	CONC. (µg/L)
BENZENE	7.7
CHLOROETHANE	1.9 (J/J)

LEGEND

MW11 — UPPER AQUIFER WELL LOCATION AND DESIGNATION

BARRIER WALL

PERIMETER GROUND WATER CONTAINMENT SYSTEM

µg/L — MICROGRAMS PER LITER

(J) — INDICATES AN ESTIMATED VALUE (LAB/VALIDATED)

(D) — INDICATES SAMPLE WAS DILUTED (LAB/VALIDATED)

ND — NO COMPOUNDS DETECTED

NOTES:
1. CONCENTRATIONS IN BOLD EXCEEDED BASELINE VALUES.

N

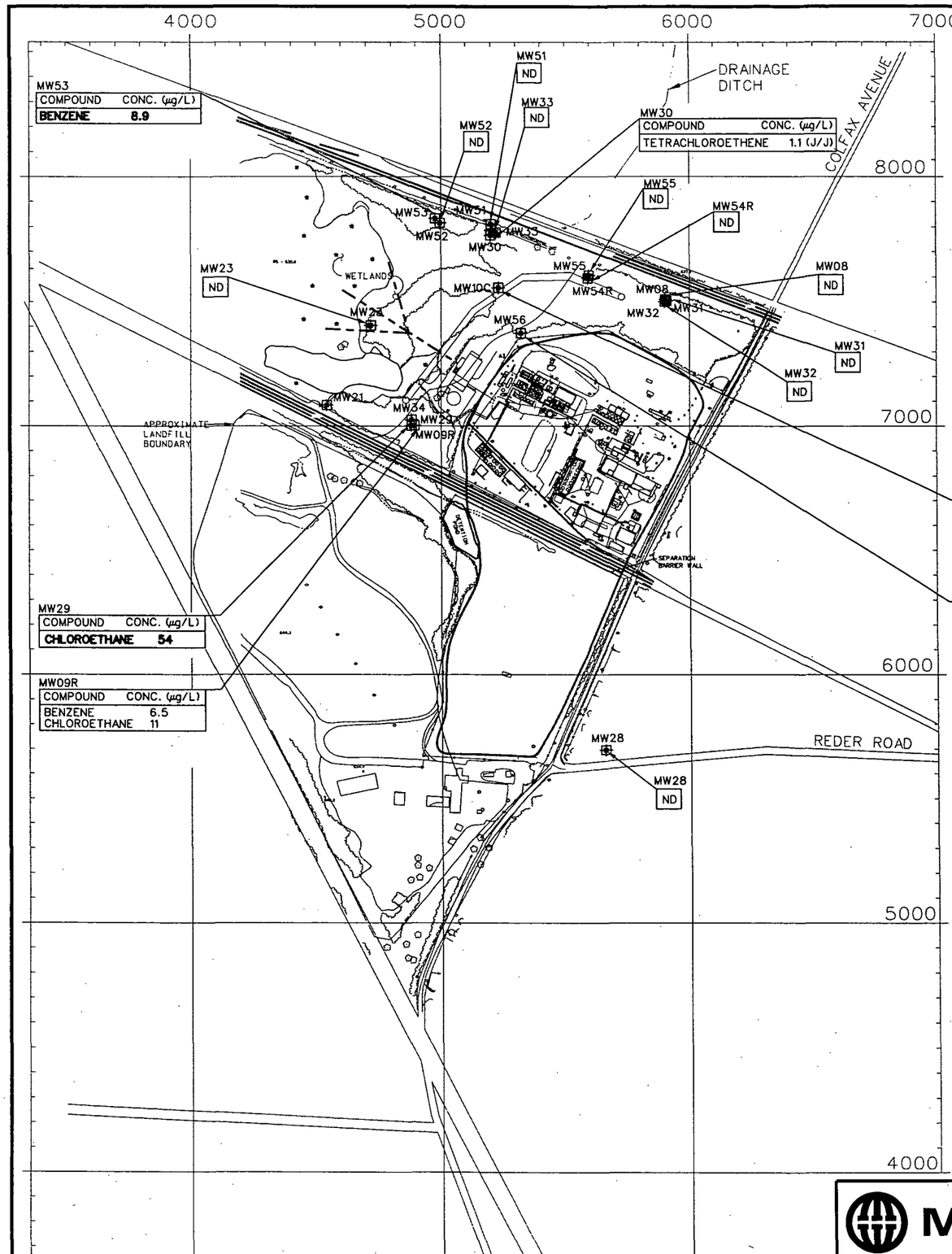
0 500 1000

SCALE IN FEET

MWH

SCALE		FIGURE
AS SHOWN	AMERICAN CHEMICAL SERVICE, INC. NPL SITE GRIFFITH, INDIANA	DETECTED VOLATILE ORGANIC COMPOUNDS IN SAMPLES FROM UPPER AQUIFER MONITORING WELLS SEPTEMBER 2004	3

JOB No. 2090603 FILE: J:/209/0603 acs/DRAWINGS/MARCH 2004/FIG_3.dgn CAS/ALC



LEGEND

	BARRIER WALL
	PERIMETER GROUND WATER CONTAINMENT SYSTEM
MW53	LOWER AQUIFER WELL LOCATION AND DESIGNATION
µg/L	MICROGRAMS PER LITER
(D)	INDICATES SAMPLE WAS DILUTED (LAB/VALIDATED)
(J)	INDICATES AN ESTIMATED VALUE (LAB/VALIDATED)
ND	NO COMPOUNDS DETECTED

NOTE: CONCENTRATIONS IN BOLD EXCEEDED BASELINE VALUES

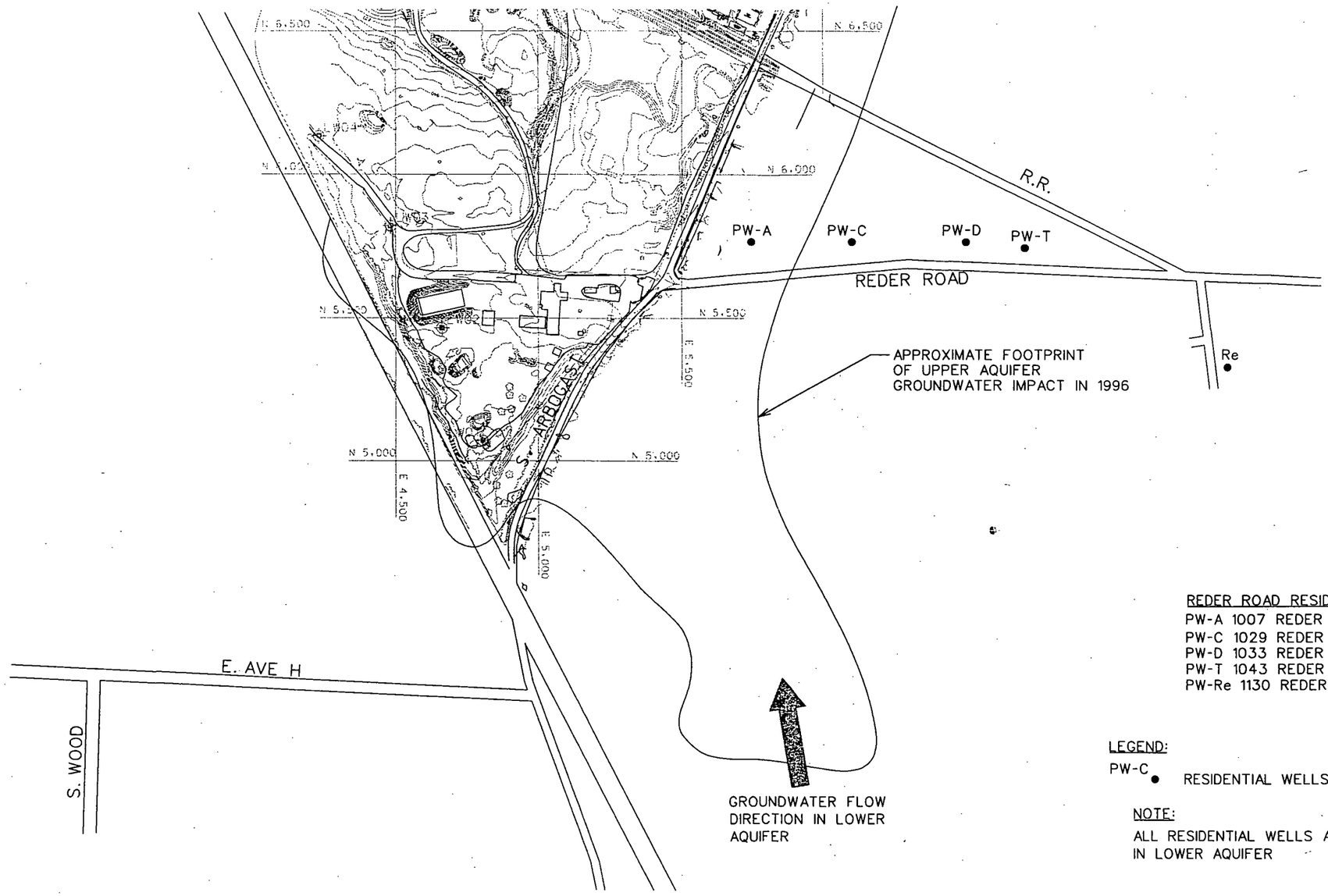
N

0 500 1000

SCALE IN FEET

MWH	SCALE AS SHOWN	AMERICAN CHEMICAL SERVICE, INC. NPL SITE GRIFFITH, INDIANA	DETECTED VOLATILE ORGANIC COMPOUNDS IN SAMPLES FROM LOWER AQUIFER MONITORING WELLS SEPTEMBER 2004	FIGURE 4

JOB No. MW Job No. FILE: \\Uschi4s02\Warrenville\jobs\209\0603 ACS\Drawings\SEPT 04\FIG_4.dgn Plot Date: 16-DEC-2004 12:00 CAS/ALC



REDER ROAD RESIDENTIAL WELLS

PW-A 1007 REDER ROAD
PW-C 1029 REDER ROAD
PW-D 1033 REDER ROAD
PW-T 1043 REDER ROAD
PW-Re 1130 REDER ROAD

LEGEND:

PW-C ● RESIDENTIAL WELLS

NOTE:

ALL RESIDENTIAL WELLS ARE SCREENED IN LOWER AQUIFER

N

0 500 1000

SCALE IN FEET

SCALE				FIGURE
AS SHOWN	MWH	AMERICAN CHEMICAL SERVICES, INC. NPL SITE GRIFFITH, INDIANA	RESIDENTIAL WELL LOCATIONS SAMPLED DURING 2004	5

JOB No. MW Job No. FILE: \\Uech4a02\Warrenville\Jobs\209\0803 ACS\Drawings\SEPT 04\Figure 5.dgn Plot Date: 16-DEC-2004 14:01 CAS/RHS

Appendix A

MWH

Appendix A
Comparison of September 2004 Results to Maximum Baseline Concentrations

Monitoring Wells

VOC Results

Residential Wells

VOC Results

SVOC Results

PCB/Pesticide Results

Inorganic Results

Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-06	1,1-Dichloroethane	ug/l	21		U	U	5
MW-06	1,1-Dichloroethene	ug/l	50		U	U	5
MW-06	1,2-Dichloroethane	ug/l	50		U	U	5
MW-06	Benzene	ug/l	320	2.7	J	J	5
MW-06	Chloroethane	ug/l	720	2.5	J	J	5
MW-06	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-06	Tetrachloroethene	ug/l	50		U	UJ	5
MW-06	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-06	Trichloroethene	ug/l	50		U	U	5
MW-06	Vinyl chloride	ug/l	50		U	U	5
MW-08	1,1-Dichloroethane	ug/l	10		U	U	5
MW-08	1,1-Dichloroethene	ug/l	10		U	U	5
MW-08	1,2-Dichloroethane	ug/l	10		U	U	5
MW-08	Benzene	ug/l	10		U	U	5
MW-08	Chloroethane	ug/l	10		U	U	5
MW-08	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-08	Tetrachloroethene	ug/l	10		U	U	5
MW-08	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-08	Trichloroethene	ug/l	10		U	U	5
MW-08	Vinyl chloride	ug/l	10		U	U	5
MW-09R	1,1-Dichloroethane	ug/l	200		U	U	5
MW-09R	1,1-Dichloroethene	ug/l	200		U	U	5
MW-09R	1,2-Dichloroethane	ug/l	200		U	U	5
MW-09R	Benzene	ug/l	310	6.5			5
MW-09R	Chloroethane	ug/l	2,900	11			5
MW-09R	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-09R	Tetrachloroethene	ug/l	200		U	UJ	5
MW-09R	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-09R	Trichloroethene	ug/l	200		U	U	5
MW-09R	Vinyl chloride	ug/l	200		U	U	5
MW-10C	1,1-Dichloroethane	ug/l	150		U	U	5
MW-10C	1,1-Dichloroethene	ug/l	150		U	U	5
MW-10C	1,2-Dichloroethane	ug/l	150		U	U	5
MW-10C	Benzene	ug/l	150	**190**	D		10
MW-10C	Chloroethane	ug/l	420	160			5
MW-10C	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-10C	Tetrachloroethene	ug/l	150		U	UJ	5
MW-10C	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-10C	Trichloroethene	ug/l	150		U	U	5
MW-10C	Vinyl chloride	ug/l	129		U	U	5
MW-11	1,1-Dichloroethane	ug/l	10		U	U	5
MW-11	1,1-Dichloroethene	ug/l	10		U	U	5
MW-11	1,2-Dichloroethane	ug/l	10		U	U	5
MW-11	Benzene	ug/l	10		U	U	5
MW-11	Chloroethane	ug/l	10		U	U	5
MW-11	cis-1,2-Dichloroethene	ug/l			U	U	5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifiers (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-11	Tetrachloroethene	ug/l	10		U	U	5
MW-11	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-11	Trichloroethene	ug/l	10		U	U	5
MW-11	Vinyl chloride	ug/l	10		U	U	5
MW-14	1,1-Dichloroethane	ug/l	100		U	U	5
MW-14	1,1-Dichloroethene	ug/l	100		U	U	5
MW-14	1,2-Dichloroethane	ug/l	100		U	U	5
MW-14	Benzene	ug/l	41		U	U	5
MW-14	Chloroethane	ug/l	1,000		U	U	5
MW-14	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-14	Tetrachloroethene	ug/l	100		U	UJ	5
MW-14	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-14	Trichloroethene	ug/l	100		U	U	5
MW-14	Vinyl chloride	ug/l	100		U	U	5
MW-15	1,1-Dichloroethane	ug/l	10		U	U	5
MW-15	1,1-Dichloroethene	ug/l	10		U	U	5
MW-15	1,2-Dichloroethane	ug/l	10		U	U	5
MW-15	Benzene	ug/l	10	7.7			5
MW-15	Chloroethane	ug/l	10	1.9	J	J	5
MW-15	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-15	Tetrachloroethene	ug/l	10		U	UJ	5
MW-15	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-15	Trichloroethene	ug/l	10		U	U	5
MW-15	Vinyl chloride	ug/l	10		U	U	5
MW-17	1,1-Dichloroethane	ug/l			U	UJ	5
MW-17	1,1-Dichloroethene	ug/l			U	UJ	5
MW-17	1,2-Dichloroethane	ug/l			U	UJ	5
MW-17	Benzene	ug/l			U	UJ	5
MW-17	Chloroethane	ug/l			U	UJ	5
MW-17	cis-1,2-Dichloroethene	ug/l			U	UJ	5
MW-17	Tetrachloroethene	ug/l		1.6	J	J	5
MW-17	trans-1,2-Dichloroethene	ug/l			U	UJ	5
MW-17	Trichloroethene	ug/l			U	UJ	5
MW-17	Vinyl chloride	ug/l			U	UJ	5
MW-19	1,1-Dichloroethane	ug/l	10		U	U	5
MW-19	1,1-Dichloroethene	ug/l	10		U	U	5
MW-19	1,2-Dichloroethane	ug/l	10		U	U	5
MW-19	Benzene	ug/l	10		U	U	5
MW-19	Chloroethane	ug/l	20	27			5
MW-19	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-19	Tetrachloroethene	ug/l	10		U	UJ	5
MW-19	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-19	Trichloroethene	ug/l	10		U	U	5
MW-19	Vinyl chloride	ug/l	10		U	U	5
MW-23	1,1-Dichloroethane	ug/l	10		U	U	5
MW-23	1,1-Dichloroethene	ug/l	10		U	U	5

BOED = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifiers (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-23	1,2-Dichloroethane	ug/l	10		U	U	5
MW-23	Benzene	ug/l	10		U	U	5
MW-23	Chloroethane	ug/l	10		U	U	5
MW-23	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-23	Tetrachloroethene	ug/l	10		U	U	5
MW-23	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-23	Trichloroethene	ug/l	10		U	U	5
MW-23	Vinyl chloride	ug/l	10		U	U	5
MW-28	1,1-Dichloroethane	ug/l	10		U	U	5
MW-28	1,1-Dichloroethene	ug/l	10		U	U	5
MW-28	1,2-Dichloroethane	ug/l	10		U	U	5
MW-28	Benzene	ug/l	10		U	U	5
MW-28	Chloroethane	ug/l	10		U	U	5
MW-28	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-28	Tetrachloroethene	ug/l	10		U	U	5
MW-28	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-28	Trichloroethene	ug/l	10		U	U	5
MW-28	Vinyl chloride	ug/l	10		U	U	5
MW-29	1,1-Dichloroethane	ug/l	10		U	U	5
MW-29	1,1-Dichloroethene	ug/l	10		U	U	5
MW-29	1,2-Dichloroethane	ug/l	10		U	U	5
MW-29	Benzene	ug/l	10		U	U	5
MW-29	Chloroethane	ug/l	10	**54**			5
MW-29	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-29	Tetrachloroethene	ug/l	10		U	UJ	5
MW-29	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-29	Trichloroethene	ug/l	10		U	U	5
MW-29	Vinyl chloride	ug/l	10		U	U	5
MW-30	1,1-Dichloroethane	ug/l	10		U	U	5
MW-30	1,1-Dichloroethene	ug/l	10		U	U	5
MW-30	1,2-Dichloroethane	ug/l	10		U	U	5
MW-30	Benzene	ug/l	10		U	U	5
MW-30	Chloroethane	ug/l	10		U	U	5
MW-30	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-30	Tetrachloroethene	ug/l	10	1.1	J	J	5
MW-30	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-30	Trichloroethene	ug/l	10		U	U	5
MW-30	Vinyl chloride	ug/l	10		U	U	5
MW-31	1,1-Dichloroethane	ug/l	10		U	U	5
MW-31	1,1-Dichloroethene	ug/l	10		U	U	5
MW-31	1,2-Dichloroethane	ug/l	10		U	U	5
MW-31	Benzene	ug/l	10		U	U	5
MW-31	Chloroethane	ug/l	10		U	U	5
MW-31	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-31	Tetrachloroethene	ug/l	10		U	U	5
MW-31	trans-1,2-Dichloroethene	ug/l			U	U	5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifiers (DQ), please see Appendices C and D.

CAS/ALC
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Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-31	Trichloroethene	ug/l	10		U	U	5
MW-31	Vinyl chloride	ug/l	10		U	U	5
MW-32	1,1-Dichloroethane	ug/l	10		U	U	5
MW-32	1,1-Dichloroethene	ug/l	10		U	U	5
MW-32	1,2-Dichloroethane	ug/l	10		U	U	5
MW-32	Benzene	ug/l	10		U	U	5
MW-32	Chloroethane	ug/l	10		U	U	5
MW-32	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-32	Tetrachloroethene	ug/l	10		U	U	5
MW-32	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-32	Trichloroethene	ug/l	10		U	U	5
MW-32	Vinyl chloride	ug/l	10		U	U	5
MW-33	1,1-Dichloroethane	ug/l	10		U	U	5
MW-33	1,1-Dichloroethene	ug/l	10		U	U	5
MW-33	1,2-Dichloroethane	ug/l	10		U	U	5
MW-33	Benzene	ug/l	10		U	U	5
MW-33	Chloroethane	ug/l	10		U	U	5
MW-33	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-33	Tetrachloroethene	ug/l	10		U	UJ	5
MW-33	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-33	Trichloroethene	ug/l	10		U	U	5
MW-33	Vinyl chloride	ug/l	10		U	U	5
MW-42	1,1-Dichloroethane	ug/l	10		U	U	5
MW-42	1,1-Dichloroethene	ug/l	10		U	U	5
MW-42	1,2-Dichloroethane	ug/l	10		U	U	5
MW-42	Benzene	ug/l	10		U	U	5
MW-42	Chloroethane	ug/l	10		U	U	5
MW-42	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-42	Tetrachloroethene	ug/l	10		U	UJ	5
MW-42	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-42	Trichloroethene	ug/l	10		U	U	5
MW-42	Vinyl chloride	ug/l	10		U	U	5
MW-43	1,1-Dichloroethane	ug/l	10		U	U	5
MW-43	1,1-Dichloroethene	ug/l	10		U	U	5
MW-43	1,2-Dichloroethane	ug/l	10		U	U	5
MW-43	Benzene	ug/l	10		U	U	5
MW-43	Chloroethane	ug/l	10		U	U	5
MW-43	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-43	Tetrachloroethene	ug/l	10		U	UJ	5
MW-43	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-43	Trichloroethene	ug/l	10		U	U	5
MW-43	Vinyl chloride	ug/l	10		U	U	5
MW-44	1,1-Dichloroethane	ug/l	10		U	U	5
MW-44	1,1-Dichloroethene	ug/l	10		U	U	5
MW-44	1,2-Dichloroethane	ug/l	10		U	U	5
MW-44	Benzene	ug/l	10		U	U	5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

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2090603.030401

Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-44	Chloroethane	ug/l	10		U	U	5
MW-44	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-44	Tetrachloroethene	ug/l	10		U	UJ	5
MW-44	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-44	Trichloroethene	ug/l	10		U	U	5
MW-44	Vinyl chloride	ug/l	10		U	U	5
MW-45	1,1-Dichloroethane	ug/l	80		U	U	5
MW-45	1,1-Dichloroethene	ug/l	80		U	U	5
MW-45	1,2-Dichloroethane	ug/l	80		U	U	5
MW-45	Benzene	ug/l	1,045		U	U	5
MW-45	Chloroethane	ug/l	215		U	U	5
MW-45	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-45	Tetrachloroethene	ug/l	80		U	UJ	5
MW-45	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-45	Trichloroethene	ug/l	80		U	U	5
MW-45	Vinyl chloride	ug/l	80		U	U	5
MW-48	1,1-Dichloroethane	ug/l	500		U	U	5
MW-48	1,1-Dichloroethene	ug/l	500		U	U	5
MW-48	1,2-Dichloroethane	ug/l	500		U	U	5
MW-48	Benzene	ug/l	9,500	890	D		28
MW-48	Chloroethane	ug/l	1,000	20			5
MW-48	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-48	Tetrachloroethene	ug/l	500		U	U	5
MW-48	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-48	Trichloroethene	ug/l	500		U	U	5
MW-48	Vinyl chloride	ug/l	500		U	U	5
MW-49	1,1-Dichloroethane	ug/l	500		U	U	5
MW-49	1,1-Dichloroethene	ug/l	500		U	U	5
MW-49	1,2-Dichloroethane	ug/l	500		U	U	5
MW-49	Benzene	ug/l	6,750	90			5
MW-49	Chloroethane	ug/l	715	11			5
MW-49	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-49	Tetrachloroethene	ug/l	500		U	U	5
MW-49	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-49	Trichloroethene	ug/l	500		U	U	5
MW-49	Vinyl chloride	ug/l	500		U	U	5
MW-51	1,1-Dichloroethane	ug/l	100		U	U	5
MW-51	1,1-Dichloroethene	ug/l	100		U	U	5
MW-51	1,2-Dichloroethane	ug/l	100		U	U	5
MW-51	Benzene	ug/l	100		U	U	5
MW-51	Chloroethane	ug/l	100		U	U	5
MW-51	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-51	Tetrachloroethene	ug/l	100		U	U	5
MW-51	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-51	Trichloroethene	ug/l	100		U	U	5
MW-51	Vinyl chloride	ug/l	100		U	U	5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

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CAS/ALC
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2090603.030401

Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-52	1,1-Dichloroethane	ug/l	100		U	UJ	5
MW-52	1,1-Dichloroethene	ug/l	100		U	UJ	5
MW-52	1,2-Dichloroethane	ug/l	100		U	UJ	5
MW-52	Benzene	ug/l	100		U	UJ	5
MW-52	Chloroethane	ug/l	100		U	UJ	5
MW-52	cis-1,2-Dichloroethene	ug/l			U	UJ	5
MW-52	Tetrachloroethene	ug/l	100		U	UJ	5
MW-52	trans-1,2-Dichloroethene	ug/l			U	UJ	5
MW-52	Trichloroethene	ug/l	100		U	UJ	5
MW-52	Vinyl chloride	ug/l	100		U	UJ	5
MW-53	1,1-Dichloroethane	ug/l	10		U	U	5
MW-53	1,1-Dichloroethene	ug/l	10		U	U	5
MW-53	1,2-Dichloroethane	ug/l	10		U	U	5
MW-53	Benzene	ug/l	10	8.9			5
MW-53	Chloroethane	ug/l	10		U	U	5
MW-53	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-53	Tetrachloroethene	ug/l	10		U	UJ	5
MW-53	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-53	Trichloroethene	ug/l	10		U	U	5
MW-53	Vinyl chloride	ug/l	10		U	U	5
MW-54R	1,1-Dichloroethane	ug/l	10		U	U	5
MW-54R	1,1-Dichloroethene	ug/l	10		U	U	5
MW-54R	1,2-Dichloroethane	ug/l	10		U	U	5
MW-54R	Benzene	ug/l	10		U	U	5
MW-54R	Chloroethane	ug/l	10		U	U	5
MW-54R	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-54R	Tetrachloroethene	ug/l	10		U	U	5
MW-54R	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-54R	Trichloroethene	ug/l	10		U	U	5
MW-54R	Vinyl chloride	ug/l	10		U	U	5
MW-55	1,1-Dichloroethane	ug/l	10		U	U	5
MW-55	1,1-Dichloroethene	ug/l	10		U	U	5
MW-55	1,2-Dichloroethane	ug/l	10		U	U	5
MW-55	Benzene	ug/l	10		U	U	5
MW-55	Chloroethane	ug/l	10		U	U	5
MW-55	cis-1,2-Dichloroethene	ug/l			U	U	5
MW-55	Tetrachloroethene	ug/l	10		U	U	5
MW-55	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-55	Trichloroethene	ug/l	10		U	U	5
MW-55	Vinyl chloride	ug/l	10		U	U	5
MW-56	1,1-Dichloroethane	ug/l			U	U	5
MW-56	1,1-Dichloroethene	ug/l			U	U	5
MW-56	1,2-Dichloroethane	ug/l			U	U	5
MW-56	Benzene	ug/l		1,100	D		50
MW-56	Chloroethane	ug/l		7.1			5
MW-56	cis-1,2-Dichloroethene	ug/l			U	U	5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

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CAS/ALC
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Monitoring Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Service NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	March 2004			
				Result	LQ	DQ	Detect Limit
MW-56	Tetrachloroethene	ug/l			U	UJ	5
MW-56	trans-1,2-Dichloroethene	ug/l			U	U	5
MW-56	Trichloroethene	ug/l			U	U	5
MW-56	Vinyl chloride	ug/l			U	U	5

BOLD = Exceedance of Highest Baseline Detection
NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifiers (DQ), please see Appendices C and D.

Residential Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-A	1,1,1-Trichloroethane	ug/l	1.0		U	UJ	0.5
PW-A	1,1,2,2-Tetrachloroethane	ug/l	1.0		U	UJ	0.5
PW-A	1,1,2-Trichloroethane	ug/l	1.0		U	UJ	0.5
PW-A	1,1-Dichloroethane	ug/l	1.0		U	UJ	0.5
PW-A	1,1-Dichloroethene	ug/l	1.0		U	UJ	0.5
PW-A	1,2,4-Trichlorobenzene	ug/l	NA		U	UJ	0.5
PW-A	1,2-Dibromo-3-chloropropane	ug/l	NA		U	UJ	0.5
PW-A	1,2-Dibromoethane	ug/l	NA		U	UJ	0.5
PW-A	1,2-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-A	1,2-Dichloroethane	ug/l	1.0		U	UJ	0.5
PW-A	1,2-Dichloropropane	ug/l	1.0		U	UJ	0.5
PW-A	1,3-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-A	1,4-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-A	2-Butanone	ug/l	5.0		U	UJ	2.5
PW-A	2-Hexanone	ug/l	5.0		U	UJ	2.5
PW-A	4-Methyl-2-pentanone	ug/l	5.0		U	UJ	2.5
PW-A	Acetone	ug/l	10		U	UJ	2.5
PW-A	Benzene	ug/l	1.0		U	UJ	0.5
PW-A	Bromodichloromethane	ug/l	1.0	0.23	J	J	0.5
PW-A	Bromoform	ug/l	1.0	0.38	J	UBJ	0.5
PW-A	Bromomethane	ug/l	1.0		U	UJ	0.5
PW-A	Carbon disulfide	ug/l	1.0		U	UJ	0.5
PW-A	Carbon Tetrachloride	ug/l	1.0		U	UJ	0.5
PW-A	Chlorobenzene	ug/l	1.0		U	UJ	0.5
PW-A	Chloroethane	ug/l	1.0		U	UJ	0.5
PW-A	Chloroform	ug/l	1.0	0.35	J	J	0.5
PW-A	Chloromethane	ug/l	1.0		U	UJ	0.5
PW-A	cis-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-A	cis-1,3-Dichloropropene	ug/l	1.0		U	UJ	0.5
PW-A	Dibromochloromethane	ug/l	1.0	0.36	J	UBJ	0.5
PW-A	Dichlorodifluoromethane	ug/l	NA		U	UJ	0.5
PW-A	Ethyl Benzene	ug/l	1.0		U	UJ	0.5
PW-A	Isopropylbenzene	ug/l	NA		U	UJ	0.5
PW-A	Methyl tert-butyl ether	ug/l	NA		U	UJ	0.5
PW-A	Methylene chloride	ug/l	1.0	0.12	J	UBJ	0.5
PW-A	m-Xylene	ug/l	NA		U	UJ	1
PW-A	o-xylene	ug/l	NA		U	UJ	0.5
PW-A	Styrene	ug/l	1.0		U	UJ	0.5
PW-A	Tetrachloroethene	ug/l	1.0		U	UJ	0.5
PW-A	Toluene	ug/l	1.0		U	UJ	0.5
PW-A	trans-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-A	trans-1,3-Dichloropropene	ug/l	1.0		U	UJ	0.5
PW-A	Trichloroethene	ug/l	1.0		U	UJ	0.5
PW-A	Trichlorofluoromethane	ug/l	NA		U	UJ	0.5
PW-A	Vinyl chloride	ug/l	1.0		U	UJ	0.5
PW-A	Xylenes (total)	ug/l	5.0		U	UJ	0.5

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CAS/ALC
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Residential Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-C	1,1,1-Trichloroethane	ug/l	1.0		U	UJ	0.5
PW-C	1,1,2,2-Tetrachloroethane	ug/l	1.0		U	UJ	0.5
PW-C	1,1,2-Trichloroethane	ug/l	1.0		U	UJ	0.5
PW-C	1,1-Dichloroethane	ug/l	1.0		U	UJ	0.5
PW-C	1,1-Dichloroethene	ug/l	1.0		U	UJ	0.5
PW-C	1,2,4-Trichlorobenzene	ug/l	NA		U	UJ	0.5
PW-C	1,2-Dibromo-3-chloropropane	ug/l	NA		U	UJ	0.5
PW-C	1,2-Dibromoethane	ug/l	NA		U	UJ	0.5
PW-C	1,2-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-C	1,2-Dichloroethane	ug/l	1.0		U	UJ	0.5
PW-C	1,2-Dichloropropane	ug/l	1.0		U	UJ	0.5
PW-C	1,3-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-C	1,4-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-C	2-Butanone	ug/l	5.0		U	UJ	2.5
PW-C	2-Hexanone	ug/l	5.0		U	UJ	2.5
PW-C	4-Methyl-2-pentanone	ug/l	5.0		U	UJ	2.5
PW-C	Acetone	ug/l	5.0		U	UJ	2.5
PW-C	Benzene	ug/l	1.0		U	UJ	0.5
PW-C	Bromodichloromethane	ug/l	1.0		U	UJ	0.5
PW-C	Bromoform	ug/l	1.0		U	UJ	0.5
PW-C	Bromomethane	ug/l	1.0		U	UJ	0.5
PW-C	Carbon disulfide	ug/l	1.0	0.11	J	J	0.5
PW-C	Carbon Tetrachloride	ug/l	1.0		U	UJ	0.5
PW-C	Chlorobenzene	ug/l	1.0		U	UJ	0.5
PW-C	Chloroethane	ug/l	1.0		U	UJ	0.5
PW-C	Chloroform	ug/l	1.0		U	UJ	0.5
PW-C	Chloromethane	ug/l	1.0		U	UJ	0.5
PW-C	cis-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-C	cis-1,3-Dichloropropene	ug/l	1.0		U	UJ	0.5
PW-C	Dibromochloromethane	ug/l	1.0		U	UJ	0.5
PW-C	Dichlorodifluoromethane	ug/l	NA		U	UJ	0.5
PW-C	Ethyl Benzene	ug/l	1.0		U	UJ	0.5
PW-C	Isopropylbenzene	ug/l	NA		U	UJ	0.5
PW-C	Methyl tert-butyl ether	ug/l	NA		U	UJ	0.5
PW-C	Methylene chloride	ug/l	1.0		U	UJ	0.5
PW-C	m-Xylene	ug/l	NA		U	UJ	1
PW-C	o-xylene	ug/l	NA		U	UJ	0.5
PW-C	Styrene	ug/l	1.0		U	UJ	0.5
PW-C	Tetrachloroethene	ug/l	1.0		U	UJ	0.5
PW-C	Toluene	ug/l	1.0		U	UJ	0.5
PW-C	trans-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-C	trans-1,3-Dichloropropene	ug/l	1.0		U	UJ	0.5
PW-C	Trichloroethene	ug/l	1.0		U	UJ	0.5
PW-C	Trichlorofluoromethane	ug/l	NA		U	UJ	0.5
PW-C	Vinyl chloride	ug/l	1.0		U	UJ	0.5
PW-C	Xylenes (total)	ug/l	5.0		U	UJ	0.5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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Residential Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-D	1,1,1-Trichloroethane	ug/l	1.0		U	UJ	0.5
PW-D	1,1,2,2-Tetrachloroethane	ug/l	1.0		U	UJ	0.5
PW-D	1,1,2-Trichloroethane	ug/l	1.0		U	UJ	0.5
PW-D	1,1-Dichloroethane	ug/l	1.0		U	UJ	0.5
PW-D	1,1-Dichloroethene	ug/l	1.0		U	UJ	0.5
PW-D	1,2,4-Trichlorobenzene	ug/l	NA		U	UJ	0.5
PW-D	1,2-Dibromo-3-chloropropane	ug/l	NA		U	UJ	0.5
PW-D	1,2-Dibromoethane	ug/l	NA		U	UJ	0.5
PW-D	1,2-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-D	1,2-Dichloroethane	ug/l	1.0		U	UJ	0.5
PW-D	1,2-Dichloropropane	ug/l	1.0		U	UJ	0.5
PW-D	1,3-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-D	1,4-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-D	2-Butanone	ug/l	5.0		U	UJ	2.5
PW-D	2-Hexanone	ug/l	5.0		U	UJ	2.5
PW-D	4-Methyl-2-pentanone	ug/l	5.0		U	UJ	2.5
PW-D	Acetone	ug/l	5.0		U	UJ	2.5
PW-D	Benzene	ug/l	1.0		U	UJ	0.5
PW-D	Bromodichloromethane	ug/l	1.0		U	UJ	0.5
PW-D	Bromoform	ug/l	1.0		U	UJ	0.5
PW-D	Bromomethane	ug/l	1.0		U	UJ	0.5
PW-D	Carbon disulfide	ug/l	1.0	0.66		J	0.5
PW-D	Carbon Tetrachloride	ug/l	1.0		U	UJ	0.5
PW-D	Chlorobenzene	ug/l	1.0		U	UJ	0.5
PW-D	Chloroethane	ug/l	1.0		U	UJ	0.5
PW-D	Chloroform	ug/l	1.0		U	UJ	0.5
PW-D	Chloromethane	ug/l	1.0		U	UJ	0.5
PW-D	cis-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-D	cis-1,3-Dichloropropene	ug/l	1.0		U	UJ	0.5
PW-D	Dibromochloromethane	ug/l	1.0		U	UJ	0.5
PW-D	Dichlorodifluoromethane	ug/l	NA		U	UJ	0.5
PW-D	Ethyl Benzene	ug/l	1.0		U	UJ	0.5
PW-D	Isopropylbenzene	ug/l	NA		U	UJ	0.5
PW-D	Methyl tert-butyl ether	ug/l	NA		U	UJ	0.5
PW-D	Methylene chloride	ug/l	2.0		U	UJ	0.5
PW-D	m-Xylene	ug/l	NA		U	UJ	1
PW-D	o-xylene	ug/l	NA		U	UJ	0.5
PW-D	Styrene	ug/l	1.0		U	UJ	0.5
PW-D	Tetrachloroethene	ug/l	1.0		U	UJ	0.5
PW-D	Toluene	ug/l	1.0		U	UJ	0.5
PW-D	trans-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-D	trans-1,3-Dichloropropene	ug/l	1.0		U	UJ	0.5
PW-D	Trichloroethene	ug/l	1.0		U	UJ	0.5
PW-D	Trichlorofluoromethane	ug/l	NA		U	UJ	0.5
PW-D	Vinyl chloride	ug/l	1.0		U	UJ	0.5
PW-D	Xylenes (total)	ug/l	5.0		U	UJ	0.5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-Re	1,1,1-Trichloroethane	ug/l	NA		U	UJ	0.5
PW-Re	1,1,2,2-Tetrachloroethane	ug/l	NA		U	UJ	0.5
PW-Re	1,1,2-Trichloroethane	ug/l	NA		U	UJ	0.5
PW-Re	1,1-Dichloroethane	ug/l	NA		U	UJ	0.5
PW-Re	1,1-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-Re	1,2,4-Trichlorobenzene	ug/l	NA		U	UJ	0.5
PW-Re	1,2-Dibromo-3-chloropropane	ug/l	NA		U	UJ	0.5
PW-Re	1,2-Dibromoethane	ug/l	NA		U	UJ	0.5
PW-Re	1,2-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-Re	1,2-Dichloroethane	ug/l	NA		U	UJ	0.5
PW-Re	1,2-Dichloropropane	ug/l	NA		U	UJ	0.5
PW-Re	1,3-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-Re	1,4-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-Re	2-Butanone	ug/l	NA		U	UJ	2.5
PW-Re	2-Hexanone	ug/l	NA		U	UJ	2.5
PW-Re	4-Methyl-2-pentanone	ug/l	NA		U	UJ	2.5
PW-Re	Acetone	ug/l	NA		U	UJ	2.5
PW-Re	Benzene	ug/l	NA		U	UJ	0.5
PW-Re	Bromodichloromethane	ug/l	NA		U	UJ	0.5
PW-Re	Bromoform	ug/l	NA		U	UJ	0.5
PW-Re	Bromomethane	ug/l	NA		U	UJ	0.5
PW-Re	Carbon disulfide	ug/l	NA		U	UJ	0.5
PW-Re	Carbon Tetrachloride	ug/l	NA		U	UJ	0.5
PW-Re	Chlorobenzene	ug/l	NA		U	UJ	0.5
PW-Re	Chloroethane	ug/l	NA		U	UJ	0.5
PW-Re	Chloroform	ug/l	NA		U	UJ	0.5
PW-Re	Chloromethane	ug/l	NA		U	UJ	0.5
PW-Re	cis-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-Re	cis-1,3-Dichloropropene	ug/l	NA		U	UJ	0.5
PW-Re	Dibromochloromethane	ug/l	NA		U	UJ	0.5
PW-Re	Dichlorodifluoromethane	ug/l	NA		U	UJ	0.5
PW-Re	Ethyl Benzene	ug/l	NA		U	UJ	0.5
PW-Re	Isopropylbenzene	ug/l	NA		U	UJ	0.5
PW-Re	Methyl tert-butyl ether	ug/l	NA		U	UJ	0.5
PW-Re	Methylene chloride	ug/l	NA		U	UJ	0.5
PW-Re	m-Xylene	ug/l	NA		U	UJ	1
PW-Re	o-xylene	ug/l	NA		U	UJ	0.5
PW-Re	Styrene	ug/l	NA		U	UJ	0.5
PW-Re	Tetrachloroethene	ug/l	NA		U	UJ	0.5
PW-Re	Toluene	ug/l	NA		U	UJ	0.5
PW-Re	trans-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-Re	trans-1,3-Dichloropropene	ug/l	NA		U	UJ	0.5
PW-Re	Trichloroethene	ug/l	NA		U	UJ	0.5
PW-Re	Trichlorofluoromethane	ug/l	NA		U	UJ	0.5
PW-Re	Vinyl chloride	ug/l	NA		U	UJ	0.5
PW-Re	Xylenes (total)	ug/l	NA		U	UJ	0.5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Volatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-T	1,1,1-Trichloroethane	ug/l	NA		U	UJ	0.5
PW-T	1,1,2,2-Tetrachloroethane	ug/l	NA		U	UJ	0.5
PW-T	1,1,2-Trichloroethane	ug/l	NA		U	UJ	0.5
PW-T	1,1-Dichloroethane	ug/l	NA		U	UJ	0.5
PW-T	1,1-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-T	1,2,4-Trichlorobenzene	ug/l	NA		U	UJ	0.5
PW-T	1,2-Dibromo-3-chloropropane	ug/l	NA		U	UJ	0.5
PW-T	1,2-Dibromoethane	ug/l	NA		U	UJ	0.5
PW-T	1,2-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-T	1,2-Dichloroethane	ug/l	NA		U	UJ	0.5
PW-T	1,2-Dichloropropane	ug/l	NA		U	UJ	0.5
PW-T	1,3-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-T	1,4-Dichlorobenzene	ug/l	NA		U	UJ	0.5
PW-T	2-Butanone	ug/l	NA		U	UJ	2.5
PW-T	2-Hexanone	ug/l	NA		U	UJ	2.5
PW-T	4-Methyl-2-pentanone	ug/l	NA		U	UJ	2.5
PW-T	Acetone	ug/l	NA		U	UJ	2.5
PW-T	Benzene	ug/l	NA		U	UJ	0.5
PW-T	Bromodichloromethane	ug/l	NA		U	UJ	0.5
PW-T	Bromoform	ug/l	NA		U	UJ	0.5
PW-T	Bromomethane	ug/l	NA		U	UJ	0.5
PW-T	Carbon disulfide	ug/l	NA		U	UJ	0.5
PW-T	Carbon Tetrachloride	ug/l	NA		U	UJ	0.5
PW-T	Chlorobenzene	ug/l	NA		U	UJ	0.5
PW-T	Chloroethane	ug/l	NA		U	UJ	0.5
PW-T	Chloroform	ug/l	NA		U	UJ	0.5
PW-T	Chloromethane	ug/l	NA		U	UJ	0.5
PW-T	cis-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-T	cis-1,3-Dichloropropene	ug/l	NA		U	UJ	0.5
PW-T	Dibromochloromethane	ug/l	NA		U	UJ	0.5
PW-T	Dichlorodifluoromethane	ug/l	NA		U	UJ	0.5
PW-T	Ethyl Benzene	ug/l	NA		U	UJ	0.5
PW-T	Isopropylbenzene	ug/l	NA		U	UJ	0.5
PW-T	Methyl tert-butyl ether	ug/l	NA		U	UJ	0.5
PW-T	Methylene chloride	ug/l	NA	0.12	J	UBJ	0.5
PW-T	m-Xylene	ug/l	NA		U	UJ	1
PW-T	o-xylene	ug/l	NA		U	UJ	0.5
PW-T	Styrene	ug/l	NA		U	UJ	0.5
PW-T	Tetrachloroethene	ug/l	NA		U	UJ	0.5
PW-T	Toluene	ug/l	NA		U	UJ	0.5
PW-T	trans-1,2-Dichloroethene	ug/l	NA		U	UJ	0.5
PW-T	trans-1,3-Dichloropropene	ug/l	NA		U	UJ	0.5
PW-T	Trichloroethene	ug/l	NA		U	UJ	0.5
PW-T	Trichlorofluoromethane	ug/l	NA		U	UJ	0.5
PW-T	Vinyl chloride	ug/l	NA		U	UJ	0.5
PW-T	Xylenes (total)	ug/l	NA		U	UJ	0.5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

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CAS/ALC
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2090603.030401

Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-A	1,2,4,5-Tetrachlorobenzene	ug/l	NA		U		5
PW-A	2,2'-oxybis(1-Chloropropane)	ug/l	5.0		U		5
PW-A	2,4,5-Trichlorophenol	ug/l	20		U		20
PW-A	2,4,6-Trichlorophenol	ug/l	5.0		U		5
PW-A	2,4-Dichlorophenol	ug/l	5.0		U		5
PW-A	2,4-Dimethylphenol	ug/l	5.0		U		5
PW-A	2,4-Dinitrophenol	ug/l	20		U	UJ	20
PW-A	2,4-Dinitrotoluene	ug/l	5.0		U		5
PW-A	2,6-Dinitrotoluene	ug/l	5.0		U		5
PW-A	2-Chloronaphthalene	ug/l	5.0		U		5
PW-A	2-Chlorophenol	ug/l	5.0		U		5
PW-A	2-Methylnaphthalene	ug/l	5.0		U		5
PW-A	2-Methylphenol	ug/l	5.0		U		5
PW-A	2-Nitroaniline	ug/l	20		U		20
PW-A	2-Nitrophenol	ug/l	5.0		U		5
PW-A	3,3'-Dichlorobenzidine	ug/l	5.0		U	UJ	5
PW-A	3-Nitroaniline	ug/l	20		U		20
PW-A	4,6-Dinitro-2-methylphenol	ug/l	20		U		20
PW-A	4-Bromophenyl-phenylether	ug/l	5.0		U		5
PW-A	4-Chloro-3-methylphenol	ug/l	5.0		U		5
PW-A	4-Chloroaniline	ug/l	5.0		U		5
PW-A	4-Chlorophenyl-phenyl ether	ug/l	5.0		U		5
PW-A	4-Methylphenol	ug/l	5.0		U		5
PW-A	4-Nitroaniline	ug/l	20		U		20
PW-A	4-Nitrophenol	ug/l	20		U		20
PW-A	Acenaphthene	ug/l	5.0		U		5
PW-A	Acenaphthylene	ug/l	5.0		U		5
PW-A	Acetophenone	ug/l	NA		U		5
PW-A	Anthracene	ug/l	5.0		U		5
PW-A	Atazine	ug/l	NA		U	UJ	5
PW-A	Benzo(a)anthracene	ug/l	5.0		U		5
PW-A	Benzo(a)pyrene	ug/l	5.0		U		5
PW-A	Benzo(b)fluoranthene	ug/l	5.0		U		5
PW-A	Benzo(g,h,i)perylene	ug/l	5.0		U		5
PW-A	Benzo(k)fluoranthene	ug/l	5.0		U		5
PW-A	Bis(2-chloroethoxy)methane	ug/l	5.0		U		5
PW-A	bis(2-chloroethyl) ether	ug/l	5.0		U		5
PW-A	Bis(2-ethylhexyl)phthalate	ug/l	5.0		U		5
PW-A	Butylbenzylphthalate	ug/l	5.0		U		5
PW-A	Chrysene	ug/l	5.0		U		5
PW-A	Dibenzo(a,h)anthracene	ug/l	5.0		U		5
PW-A	Dibenzofuran	ug/l	5.0		U		5
PW-A	Diethylphthalate	ug/l	5.0		U		5
PW-A	Dimethylphthalate	ug/l	5.0		U		5
PW-A	Di-n-butylphthalate	ug/l	5.0		U		5
PW-A	Di-n-octylphthalate	ug/l	5.0		U		5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-A	Fluoranthene	ug/l	5.0		U		5
PW-A	Fluorene	ug/l	5.0		U		5
PW-A	Hexachlorobenzene	ug/l	5.0		U		5
PW-A	Hexachlorobutadiene	ug/l	5.0		U		5
PW-A	Hexachlorocyclopentadiene	ug/l	5.0		U		5
PW-A	Hexachloroethane	ug/l	5.0		U		5
PW-A	Indeno(1,2,3-cd)pyrene	ug/l	5.0		U		5
PW-A	Isophorone	ug/l	5.0		U		5
PW-A	Naphthalene	ug/l	5.0		U		5
PW-A	Nitrobenzene	ug/l	5.0		U		5
PW-A	N-Nitroso-di-n-propylamine	ug/l	5.0		U		5
PW-A	N-Nitrosodiphenylamine	ug/l	5.0		U		5
PW-A	Pentachlorophenol	ug/l	20		U		5
PW-A	Phenanthrene	ug/l	5.0		U		5
PW-A	Phenol	ug/l	5.0		U		5
PW-A	Pyrene	ug/l	5.0		U		5
PW-C	1,2,4,5-Tetrachlorobenzene	ug/l	NA		U		5
PW-C	2,2'-oxybis(1-Chloropropane)	ug/l	5.0		U	UJ	5
PW-C	2,4,5-Trichlorophenol	ug/l	20		U		20
PW-C	2,4,6-Trichlorophenol	ug/l	5.0		U		5
PW-C	2,4-Dichlorophenol	ug/l	5.0		U		5
PW-C	2,4-Dimethylphenol	ug/l	5.0		U		5
PW-C	2,4-Dinitrophenol	ug/l	20		U		20
PW-C	2,4-Dinitrotoluene	ug/l	5.0		U		5
PW-C	2,6-Dinitrotoluene	ug/l	5.0		U		5
PW-C	2-Chloronaphthalene	ug/l	5.0		U		5
PW-C	2-Chlorophenol	ug/l	5.0		U		5
PW-C	2-Methylnaphthalene	ug/l	5.0		U		5
PW-C	2-Methylphenol	ug/l	5.0		U		5
PW-C	2-Nitroaniline	ug/l	20		U		20
PW-C	2-Nitrophenol	ug/l	5.0		U		5
PW-C	3,3'-Dichlorobenzidine	ug/l	5.0		U	UJ	5
PW-C	3-Nitroaniline	ug/l	20		U		20
PW-C	4,6-Dinitro-2-methylphenol	ug/l	20		U		20
PW-C	4-Bromophenyl-phenylether	ug/l	5.0		U		5
PW-C	4-Chloro-3-methylphenol	ug/l	5.0		U		5
PW-C	4-Chloroaniline	ug/l	5.0		U		5
PW-C	4-Chlorophenyl-phenyl ether	ug/l	5.0		U		5
PW-C	4-Methylphenol	ug/l	5.0		U		5
PW-C	4-Nitroaniline	ug/l	20		U		20
PW-C	4-Nitrophenol	ug/l	20		U		20
PW-C	Acenaphthene	ug/l	5.0		U		5
PW-C	Acenaphthylene	ug/l	5.0		U		5
PW-C	Acetophenone	ug/l	NA		U		5
PW-C	Anthracene	ug/l	5.0		U		5
PW-C	Atazine	ug/l	NA		U	UJ	5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-C	Benzo(a)anthracene	ug/l	5.0		U		5
PW-C	Benzo(a)pyrene	ug/l	5.0		U		5
PW-C	Benzo(b)fluoranthene	ug/l	5.0		U		5
PW-C	Benzo(g,h,i)perylene	ug/l	5.0		U		5
PW-C	Benzo(k)fluoranthene	ug/l	5.0		U		5
PW-C	Bis(2-chloroethoxy)methane	ug/l	5.0		U		5
PW-C	bis(2-chloroethyl) ether	ug/l	5.0		U		5
PW-C	Bis(2-ethylhexyl)phthalate	ug/l	5.0		U		5
PW-C	Butylbenzylphthalate	ug/l	5.0		U		5
PW-C	Chrysene	ug/l	5.0		U		5
PW-C	Dibenzo(a,h)anthracene	ug/l	5.0		U		5
PW-C	Dibenzofuran	ug/l	5.0		U		5
PW-C	Diethylphthalate	ug/l	5.0		U		5
PW-C	Dimethylphthalate	ug/l	5.0		U		5
PW-C	Di-n-butylphthalate	ug/l	5.0		U		5
PW-C	Di-n-octylphthalate	ug/l	5.0		U		5
PW-C	Fluoranthene	ug/l	5.0		U		5
PW-C	Fluorene	ug/l	5.0		U		5
PW-C	Hexachlorobenzene	ug/l	5.0		U		5
PW-C	Hexachlorobutadiene	ug/l	5.0		U		5
PW-C	Hexachlorocyclopentadiene	ug/l	5.0		U		5
PW-C	Hexachloroethane	ug/l	5.0		U		5
PW-C	Indeno(1,2,3-cd)pyrene	ug/l	5.0		U		5
PW-C	Isophorone	ug/l	5.0		U		5
PW-C	Naphthalene	ug/l	5.0		U		5
PW-C	Nitrobenzene	ug/l	5.0		U		5
PW-C	N-Nitroso-di-n-propylamine	ug/l	5.0		U		5
PW-C	N-Nitrosodiphenylamine	ug/l	5.0		U		5
PW-C	Pentachlorophenol	ug/l	20		U		5
PW-C	Phenanthrene	ug/l	5.0		U		5
PW-C	Phenol	ug/l	5.0		U		5
PW-C	Pyrene	ug/l	5.0		U		5
PW-D	1,2,4,5-Tetrachlorobenzene	ug/l	NA		U		5
PW-D	2,2'-oxybis(1-Chloropropane)	ug/l	5.0		U		5
PW-D	2,4,5-Trichlorophenol	ug/l	20		U		20
PW-D	2,4,6-Trichlorophenol	ug/l	5.0		U		5
PW-D	2,4-Dichlorophenol	ug/l	5.0		U		5
PW-D	2,4-Dimethylphenol	ug/l	5.0		U		5
PW-D	2,4-Dinitrophenol	ug/l	20		U	UJ	20
PW-D	2,4-Dinitrotoluene	ug/l	5.0		U		5
PW-D	2,6-Dinitrotoluene	ug/l	5.0		U		5
PW-D	2-Chloronaphthalene	ug/l	5.0		U		5
PW-D	2-Chlorophenol	ug/l	5.0		U		5
PW-D	2-Methylnaphthalene	ug/l	5.0		U		5
PW-D	2-Methylphenol	ug/l	5.0		U		5
PW-D	2-Nitroaniline	ug/l	20		U		20

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-D	2-Nitrophenol	ug/l	5.0		U		5
PW-D	3,3'-Dichlorobenzidine	ug/l	5.0		U	UJ	5
PW-D	3-Nitroaniline	ug/l	20		U		20
PW-D	4,6-Dinitro-2-methylphenol	ug/l	20		U		20
PW-D	4-Bromophenyl-phenylether	ug/l	5.0		U		5
PW-D	4-Chloro-3-methylphenol	ug/l	5.0		U		5
PW-D	4-Chloroaniline	ug/l	5.0		U		5
PW-D	4-Chlorophenyl-phenyl ether	ug/l	5.0		U		5
PW-D	4-Methylphenol	ug/l	5.0		U		5
PW-D	4-Nitroaniline	ug/l	20		U		20
PW-D	4-Nitrophenol	ug/l	20		U		20
PW-D	Acenaphthene	ug/l	5.0		U		5
PW-D	Acenaphthylene	ug/l	5.0		U		5
PW-D	Acetophenone	ug/l	NA		U		5
PW-D	Anthracene	ug/l	5.0		U		5
PW-D	Atazine	ug/l	NA		U	UJ	5
PW-D	Benzo(a)anthracene	ug/l	5.0		U		5
PW-D	Benzo(a)pyrene	ug/l	5.0		U		5
PW-D	Benzo(b)fluoranthene	ug/l	5.0		U		5
PW-D	Benzo(g,h,i)perylene	ug/l	5.0		U		5
PW-D	Benzo(k)fluoranthene	ug/l	5.0		U		5
PW-D	Bis(2-chloroethoxy)methane	ug/l	5.0		U		5
PW-D	bis(2-chloroethyl) ether	ug/l	5.0		U		5
PW-D	Bis(2-ethylhexyl)phthalate	ug/l	5.0		U		5
PW-D	Butylbenzylphthalate	ug/l	5.0		U		5
PW-D	Chrysene	ug/l	5.0		U		5
PW-D	Dibenzo(a,h)anthracene	ug/l	5.0		U		5
PW-D	Dibenzofuran	ug/l	5.0		U		5
PW-D	Diethylphthalate	ug/l	5.0		U		5
PW-D	Dimethylphthalate	ug/l	5.0		U		5
PW-D	Di-n-butylphthalate	ug/l	5.0		U		5
PW-D	Di-n-octylphthalate	ug/l	5.0		U		5
PW-D	Fluoranthene	ug/l	5.0		U		5
PW-D	Fluorene	ug/l	5.0		U		5
PW-D	Hexachlorobenzene	ug/l	5.0		U		5
PW-D	Hexachlorobutadiene	ug/l	5.0		U		5
PW-D	Hexachlorocyclopentadiene	ug/l	5.0		U		5
PW-D	Hexachloroethane	ug/l	5.0		U		5
PW-D	Indeno(1,2,3-cd)pyrene	ug/l	5.0		U		5
PW-D	Isophorone	ug/l	5.0		U		5
PW-D	Naphthalene	ug/l	5.0		U		5
PW-D	Nitrobenzene	ug/l	5.0		U		5
PW-D	N-Nitroso-di-n-propylamine	ug/l	5.0		U		5
PW-D	N-Nitrosodiphenylamine	ug/l	5.0		U		5
PW-D	Pentachlorophenol	ug/l	20		U		5
PW-D	Phenanthrene	ug/l	5.0		U		5

BOLD = Exceedance of Highest Baseline Detection
NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-D	Phenol	ug/l	5.0		U		5
PW-D	Pyrene	ug/l	5.0		U		5
PW-Re	1,2,4,5-Tetrachlorobenzene	ug/l	NA		U		5
PW-Re	2,2'-oxybis(1-Chloropropane)	ug/l	NA		U		5
PW-Re	2,4,5-Trichlorophenol	ug/l	NA		U		20
PW-Re	2,4,6-Trichlorophenol	ug/l	NA		U		5
PW-Re	2,4-Dichlorophenol	ug/l	NA		U		5
PW-Re	2,4-Dimethylphenol	ug/l	NA		U		5
PW-Re	2,4-Dinitrophenol	ug/l	NA		U	UJ	20
PW-Re	2,4-Dinitrotoluene	ug/l	NA		U		5
PW-Re	2,6-Dinitrotoluene	ug/l	NA		U		5
PW-Re	2-Chloronaphthalene	ug/l	NA		U		5
PW-Re	2-Chlorophenol	ug/l	NA		U		5
PW-Re	2-Methylnaphthalene	ug/l	NA		U		5
PW-Re	2-Methylphenol	ug/l	NA		U		5
PW-Re	2-Nitroaniline	ug/l	NA		U		20
PW-Re	2-Nitrophenol	ug/l	NA		U		5
PW-Re	3,3'-Dichlorobenzidine	ug/l	NA		U	UJ	5
PW-Re	3-Nitroaniline	ug/l	NA		U		20
PW-Re	4,6-Dinitro-2-methylphenol	ug/l	NA		U		20
PW-Re	4-Bromophenyl-phenylether	ug/l	NA		U		5
PW-Re	4-Chloro-3-methylphenol	ug/l	NA		U		5
PW-Re	4-Chloroaniline	ug/l	NA		U		5
PW-Re	4-Chlorophenyl-phenyl ether	ug/l	NA		U		5
PW-Re	4-Methylphenol	ug/l	NA		U		5
PW-Re	4-Nitroaniline	ug/l	NA		U		20
PW-Re	4-Nitrophenol	ug/l	NA		U		20
PW-Re	Acenaphthene	ug/l	NA		U		5
PW-Re	Acenaphthylene	ug/l	NA		U		5
PW-Re	Acetophenone	ug/l	NA		U		5
PW-Re	Anthracene	ug/l	NA		U		5
PW-Re	Atazine	ug/l	NA		U	UJ	5
PW-Re	Benzo(a)anthracene	ug/l	NA		U		5
PW-Re	Benzo(a)pyrene	ug/l	NA		U		5
PW-Re	Benzo(b)fluoranthene	ug/l	NA		U		5
PW-Re	Benzo(g,h,i)perylene	ug/l	NA		U		5
PW-Re	Benzo(k)fluoranthene	ug/l	NA		U		5
PW-Re	Bis(2-chloroethoxy)methane	ug/l	NA		U		5
PW-Re	bis(2-chloroethyl) ether	ug/l	NA		U		5
PW-Re	Bis(2-ethylhexyl)phthalate	ug/l	NA		U		5
PW-Re	Butylbenzylphthalate	ug/l	NA		U		5
PW-Re	Chrysene	ug/l	NA		U		5
PW-Re	Dibenzo(a,h)anthracene	ug/l	NA		U		5
PW-Re	Dibenzofuran	ug/l	NA		U		5
PW-Re	Diethylphthalate	ug/l	NA		U		5
PW-Re	Dimethylphthalate	ug/l	NA		U		5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-Re	Di-n-butylphthalate	ug/l	NA		U		5
PW-Re	Di-n-octylphthalate	ug/l	NA		U		5
PW-Re	Fluoranthene	ug/l	NA		U		5
PW-Re	Fluorene	ug/l	NA		U		5
PW-Re	Hexachlorobenzene	ug/l	NA		U		5
PW-Re	Hexachlorobutadiene	ug/l	NA		U		5
PW-Re	Hexachlorocyclopentadiene	ug/l	NA		U		5
PW-Re	Hexachloroethane	ug/l	NA		U		5
PW-Re	Indeno(1,2,3-cd)pyrene	ug/l	NA		U		5
PW-Re	Isophorone	ug/l	NA		U		5
PW-Re	Naphthalene	ug/l	NA		U		5
PW-Re	Nitrobenzene	ug/l	NA		U		5
PW-Re	N-Nitroso-di-n-propylamine	ug/l	NA		U		5
PW-Re	N-Nitrosodiphenylamine	ug/l	NA		U		5
PW-Re	Pentachlorophenol	ug/l	NA		U		5
PW-Re	Phenanthrene	ug/l	NA		U		5
PW-Re	Phenol	ug/l	NA		U		5
PW-Re	Pyrene	ug/l	NA		U		5
PW-T	1,2,4,5-Tetrachlorobenzene	ug/l	NA		U		5
PW-T	2,2'-oxybis(1-Chloropropane)	ug/l	NA		U		5
PW-T	2,4,5-Trichlorophenol	ug/l	NA		U		20
PW-T	2,4,6-Trichlorophenol	ug/l	NA		U		5
PW-T	2,4-Dichlorophenol	ug/l	NA		U		5
PW-T	2,4-Dimethylphenol	ug/l	NA		U		5
PW-T	2,4-Dinitrophenol	ug/l	NA		U	UJ	20
PW-T	2,4-Dinitrotoluene	ug/l	NA		U		5
PW-T	2,6-Dinitrotoluene	ug/l	NA		U		5
PW-T	2-Chloronaphthalene	ug/l	NA		U		5
PW-T	2-Chlorophenol	ug/l	NA		U		5
PW-T	2-Methylnaphthalene	ug/l	NA		U		5
PW-T	2-Methylphenol	ug/l	NA		U		5
PW-T	2-Nitroaniline	ug/l	NA		U		20
PW-T	2-Nitrophenol	ug/l	NA		U		5
PW-T	3,3'-Dichlorobenzidine	ug/l	NA		U	UJ	5
PW-T	3-Nitroaniline	ug/l	NA		U		20
PW-T	4,6-Dinitro-2-methylphenol	ug/l	NA		U		20
PW-T	4-Bromophenyl-phenylether	ug/l	NA		U		5
PW-T	4-Chloro-3-methylphenol	ug/l	NA		U		5
PW-T	4-Chloroaniline	ug/l	NA		U		5
PW-T	4-Chlorophenyl-phenyl ether	ug/l	NA		U		5
PW-T	4-Methylphenol	ug/l	NA		U		5
PW-T	4-Nitroaniline	ug/l	NA		U		20
PW-T	4-Nitrophenol	ug/l	NA		U		20
PW-T	Acenaphthene	ug/l	NA		U		5
PW-T	Acenaphthylene	ug/l	NA		U		5
PW-T	Acetophenone	ug/l	NA		U		5

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
J:\209\0603 ACS\Database\GW Monitoring\Access2000versions\ACS GW Database_2000.mdb[rptPWNewResultsSVOC]
2090603.030401

Residential Well Semivolatile Organic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	November 2003			
				Result	LQ	DQ	Detect Limit
PW-T	Anthracene	ug/l	NA		U		5
PW-T	Atazine	ug/l	NA		U	UJ	5
PW-T	Benzo(a)anthracene	ug/l	NA		U		5
PW-T	Benzo(a)pyrene	ug/l	NA		U		5
PW-T	Benzo(b)fluoranthene	ug/l	NA		U		5
PW-T	Benzo(g,h,i)perylene	ug/l	NA		U		5
PW-T	Benzo(k)fluoranthene	ug/l	NA		U		5
PW-T	Bis(2-chloroethoxy)methane	ug/l	NA		U		5
PW-T	bis(2-chloroethyl) ether	ug/l	NA		U		5
PW-T	Bis(2-ethylhexyl)phthalate	ug/l	NA	4.8	J		5
PW-T	Butylbenzylphthalate	ug/l	NA		U		5
PW-T	Chrysene	ug/l	NA		U		5
PW-T	Dibenzo(a,h)anthracene	ug/l	NA		U		5
PW-T	Dibenzofuran	ug/l	NA		U		5
PW-T	Diethylphthalate	ug/l	NA		U		5
PW-T	Dimethylphthalate	ug/l	NA		U		5
PW-T	Di-n-butylphthalate	ug/l	NA		U		5
PW-T	Di-n-octylphthalate	ug/l	NA		U		5
PW-T	Fluoranthene	ug/l	NA		U		5
PW-T	Fluorene	ug/l	NA		U		5
PW-T	Hexachlorobenzene	ug/l	NA		U		5
PW-T	Hexachlorobutadiene	ug/l	NA		U		5
PW-T	Hexachlorocyclopentadiene	ug/l	NA		U		5
PW-T	Hexachloroethane	ug/l	NA		U		5
PW-T	Indeno(1,2,3-cd)pyrene	ug/l	NA		U		5
PW-T	Isophorone	ug/l	NA		U		5
PW-T	Naphthalene	ug/l	NA		U		5
PW-T	Nitrobenzene	ug/l	NA		U		5
PW-T	N-Nitroso-di-n-propylamine	ug/l	NA		U		5
PW-T	N-Nitrosodiphenylamine	ug/l	NA		U		5
PW-T	Pentachlorophenol	ug/l	NA		U		5
PW-T	Phenanthrene	ug/l	NA		U		5
PW-T	Phenol	ug/l	NA		U		5
PW-T	Pyrene	ug/l	NA		U		5

BOLD = Exceedance of Highest Baseline Detection
NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Pesticide and PCB Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-A	4,4'-DDD	ug/l	0.02		U		0.02
PW-A	4,4'-DDE	ug/l	0.02		U		0.02
PW-A	4,4'-DDT	ug/l	0.02	0.01	J		0.02
PW-A	Aldrin	ug/l	0.01		U		0.01
PW-A	alpha-BHC	ug/l	0.01		U		0.01
PW-A	alpha-Chlordane	ug/l	0.01		U		0.01
PW-A	Aroclor-1016	ug/l	0.20		U		0.2
PW-A	Aroclor-1221	ug/l	0.40		U		0.4
PW-A	Aroclor-1232	ug/l	0.20		U		0.2
PW-A	Aroclor-1242	ug/l	0.20		U		0.2
PW-A	Aroclor-1248	ug/l	0.20		U		0.2
PW-A	Aroclor-1254	ug/l	0.20		U		0.2
PW-A	Aroclor-1260	ug/l	0.20		U		0.2
PW-A	beta-BHC	ug/l	0.01		U		0.01
PW-A	delta-BHC	ug/l	0.01		U		0.01
PW-A	Dieldrin	ug/l	0.02		U		0.02
PW-A	Endosulfan I	ug/l	0.01		U		0.01
PW-A	Endosulfan II	ug/l	0.02		U		0.02
PW-A	Endosulfan sulfate	ug/l	0.02		U		0.02
PW-A	Endrin	ug/l	0.02		U		0.02
PW-A	Endrin aldehyde	ug/l	0.02		U		0.02
PW-A	Endrin ketone	ug/l	0.02		U		0.02
PW-A	gamma-BHC	ug/l	0.01		U		0.01
PW-A	gamma-Chlordane	ug/l	0.01		U		0.01
PW-A	Heptachlor	ug/l	0.01		U		0.01
PW-A	Heptachlor epoxide	ug/l	0.01		U		0.01
PW-A	Methoxychlor	ug/l	0.10		U		0.1
PW-A	Toxaphene	ug/l	1.0		U		1
PW-C	4,4'-DDD	ug/l	0.02		U		0.02
PW-C	4,4'-DDE	ug/l	0.02		U		0.02
PW-C	4,4'-DDT	ug/l	0.02		U		0.02
PW-C	Aldrin	ug/l	0.01		U		0.01
PW-C	alpha-BHC	ug/l	0.01		U		0.01
PW-C	alpha-Chlordane	ug/l	0.01		U		0.01
PW-C	Aroclor-1016	ug/l	0.20		U		0.2
PW-C	Aroclor-1221	ug/l	0.40		U		0.4
PW-C	Aroclor-1232	ug/l	0.20		U		0.2
PW-C	Aroclor-1242	ug/l	0.20		U		0.2
PW-C	Aroclor-1248	ug/l	0.20		U		0.2
PW-C	Aroclor-1254	ug/l	0.20		U		0.2
PW-C	Aroclor-1260	ug/l	0.20		U		0.2
PW-C	beta-BHC	ug/l	0.01		U		0.01
PW-C	delta-BHC	ug/l	0.01		U		0.01
PW-C	Dieldrin	ug/l	0.02		U		0.02
PW-C	Endosulfan I	ug/l	0.01		U		0.01
PW-C	Endosulfan II	ug/l	0.02		U		0.02

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Pesticide and PCB Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-C	Endosulfan sulfate	ug/l	0.02		U		0.02
PW-C	Endrin	ug/l	0.02		U		0.02
PW-C	Endrin aldehyde	ug/l	0.02		U		0.02
PW-C	Endrin ketone	ug/l	0.02		U		0.02
PW-C	gamma-BHC	ug/l	0.01		U		0.01
PW-C	gamma-Chlordane	ug/l	0.01		U		0.01
PW-C	Heptachlor	ug/l	0.01		U		0.01
PW-C	Heptachlor epoxide	ug/l	0.01		U		0.01
PW-C	Methoxychlor	ug/l	0.10		U		0.1
PW-C	Toxaphene	ug/l	1.0		U		1
PW-D	4,4'-DDD	ug/l	0.02		U		0.02
PW-D	4,4'-DDE	ug/l	0.02		U		0.02
PW-D	4,4'-DDT	ug/l	0.02		U		0.02
PW-D	Aldrin	ug/l	0.01		U		0.01
PW-D	alpha-BHC	ug/l	0.01		U		0.01
PW-D	alpha-Chlordane	ug/l	0.01		U		0.01
PW-D	Aroclor-1016	ug/l	0.20		U		0.2
PW-D	Aroclor-1221	ug/l	0.40		U		0.4
PW-D	Aroclor-1232	ug/l	0.20		U		0.2
PW-D	Aroclor-1242	ug/l	0.20		U		0.2
PW-D	Aroclor-1248	ug/l	0.20		U		0.2
PW-D	Aroclor-1254	ug/l	0.20		U		0.2
PW-D	Aroclor-1260	ug/l	0.20		U		0.2
PW-D	beta-BHC	ug/l	0.01		U		0.01
PW-D	delta-BHC	ug/l	0.01		U		0.01
PW-D	Dieldrin	ug/l	0.02		U		0.02
PW-D	Endosulfan I	ug/l	0.01		U		0.01
PW-D	Endosulfan II	ug/l	0.02		U		0.02
PW-D	Endosulfan sulfate	ug/l	0.02		U		0.02
PW-D	Endrin	ug/l	0.02		U		0.02
PW-D	Endrin aldehyde	ug/l	0.02		U		0.02
PW-D	Endrin ketone	ug/l	0.02		U		0.02
PW-D	gamma-BHC	ug/l	0.01		U		0.01
PW-D	gamma-Chlordane	ug/l	0.01		U		0.01
PW-D	Heptachlor	ug/l	0.01		U		0.01
PW-D	Heptachlor epoxide	ug/l	0.01		U		0.01
PW-D	Methoxychlor	ug/l	0.10		U		0.1
PW-D	Toxaphene	ug/l	1.0		U		1
PW-Re	4,4'-DDD	ug/l	NA		U		0.02
PW-Re	4,4'-DDE	ug/l	NA		U		0.02
PW-Re	4,4'-DDT	ug/l	NA		U		0.02
PW-Re	Aldrin	ug/l	NA		U		0.01
PW-Re	alpha-BHC	ug/l	NA		U		0.01
PW-Re	alpha-Chlordane	ug/l	NA		U		0.01
PW-Re	Aroclor-1016	ug/l	NA		U		0.2
PW-Re	Aroclor-1221	ug/l	NA		U		0.4

BOLD = Exceedance of Highest Baseline Detection
NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
J::\209\0603 ACS\Database\GW Monitoring\Access2000versions\ACS GW Database_2000.mdbb [rptPWNewResultsPCB]
2090603.030401

Residential Well Pesticide and PCB Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-Re	Aroclor-1232	ug/l	NA		U		0.2
PW-Re	Aroclor-1242	ug/l	NA		U		0.2
PW-Re	Aroclor-1248	ug/l	NA		U		0.2
PW-Re	Aroclor-1254	ug/l	NA		U		0.2
PW-Re	Aroclor-1260	ug/l	NA		U		0.2
PW-Re	beta-BHC	ug/l	NA		U		0.01
PW-Re	delta-BHC	ug/l	NA		U		0.01
PW-Re	Dieldrin	ug/l	NA		U		0.02
PW-Re	Endosulfan I	ug/l	NA		U		0.01
PW-Re	Endosulfan II	ug/l	NA		U		0.02
PW-Re	Endosulfan sulfate	ug/l	NA		U		0.02
PW-Re	Endrin	ug/l	NA		U		0.02
PW-Re	Endrin aldehyde	ug/l	NA		U		0.02
PW-Re	Endrin ketone	ug/l	NA		U		0.02
PW-Re	gamma-BHC	ug/l	NA		U		0.01
PW-Re	gamma-Chlordane	ug/l	NA		U		0.01
PW-Re	Heptachlor	ug/l	NA		U		0.01
PW-Re	Heptachlor epoxide	ug/l	NA		U		0.01
PW-Re	Methoxychlor	ug/l	NA		U		0.1
PW-Re	Toxaphene	ug/l	NA		U		1
PW-T	4,4'-DDD	ug/l	NA		U		0.02
PW-T	4,4'-DDE	ug/l	NA		U		0.02
PW-T	4,4'-DDT	ug/l	NA		U		0.02
PW-T	Aldrin	ug/l	NA		U		0.01
PW-T	alpha-BHC	ug/l	NA		U		0.01
PW-T	alpha-Chlordane	ug/l	NA		U		0.01
PW-T	Aroclor-1016	ug/l	NA		U		0.2
PW-T	Aroclor-1221	ug/l	NA		U		0.4
PW-T	Aroclor-1232	ug/l	NA		U		0.2
PW-T	Aroclor-1242	ug/l	NA		U		0.2
PW-T	Aroclor-1248	ug/l	NA		U		0.2
PW-T	Aroclor-1254	ug/l	NA		U		0.2
PW-T	Aroclor-1260	ug/l	NA		U		0.2
PW-T	beta-BHC	ug/l	NA		U		0.01
PW-T	delta-BHC	ug/l	NA		U		0.01
PW-T	Dieldrin	ug/l	NA		U		0.02
PW-T	Endosulfan I	ug/l	NA		U		0.01
PW-T	Endosulfan II	ug/l	NA		U		0.02
PW-T	Endosulfan sulfate	ug/l	NA		U		0.02
PW-T	Endrin	ug/l	NA		U		0.02
PW-T	Endrin aldehyde	ug/l	NA		U		0.02
PW-T	Endrin ketone	ug/l	NA		U		0.02
PW-T	gamma-BHC	ug/l	NA		U		0.01
PW-T	gamma-Chlordane	ug/l	NA		U		0.01
PW-T	Heptachlor	ug/l	NA		U		0.01
PW-T	Heptachlor epoxide	ug/l	NA		U		0.01

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Residential Well Pesticide and PCB Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-T	Methoxychlor	ug/l	NA		U		0.1
PW-T	Toxaphene	ug/l	NA		U		1

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CAS/ALC
J::\209\0603 ACS\Database\GW Monitoring\Access2000versions\ACS GW Database_2000.mdbb [rptPWNewResultsPCB]
2090603.030401

Residential Well Inorganic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-A	Aluminum	ug/l	11		U		200
PW-A	Antimony	ug/l	1.0		U		10
PW-A	Arsenic	ug/l	2.0		U		10
PW-A	Barium	ug/l	119	**121**	B		200
PW-A	Beryllium	ug/l	1.0		U		5
PW-A	Cadmium	ug/l	1.0		U		5
PW-A	Calcium	ug/l	93,400	81,400			5,000
PW-A	Chromium (Total)	ug/l	1.0		U		5
PW-A	Cobalt	ug/l	1.0		U		5
PW-A	Copper	ug/l	4.8	3.4	B	UB	5
PW-A	Cyanide (Total)	ug/l	10		U		10
PW-A	Iron	ug/l	2,870	1,900		B	100
PW-A	Lead	ug/l	1.0		U		3
PW-A	Magnesium	ug/l	43,500	41,800			5,000
PW-A	Manganese	ug/l	54	32.2			10
PW-A	Mercury	ug/l	0.20		U		0.64
PW-A	Nickel	ug/l	2.5		U		40
PW-A	Potassium	ug/l	1,860	**1,910**	BE	J	5,000
PW-A	Selenium	ug/l	2.0	**2.4**	UN	UJ	5
PW-A	Silver	ug/l	1.0		U		5
PW-A	Sodium	ug/l	15,600	**21,400**			5,000
PW-A	Thallium	ug/l	3.0		U		10
PW-A	Vanadium	ug/l	1.0		U		20
PW-A	Zinc	ug/l	121		U		20
PW-C	Aluminum	ug/l	25		U		200
PW-C	Antimony	ug/l	1.0	**3.6**	B	B	10
PW-C	Arsenic	ug/l	2.0		U		10
PW-C	Barium	ug/l	166	139	B		200
PW-C	Beryllium	ug/l	1.0		U		5
PW-C	Cadmium	ug/l	1.0		U		5
PW-C	Calcium	ug/l	93,200	81,900			5,000
PW-C	Chromium (Total)	ug/l	1.0		U		5
PW-C	Cobalt	ug/l	1.0		U		5
PW-C	Copper	ug/l	32	**106**		B	5
PW-C	Cyanide (Total)	ug/l	10		U		10
PW-C	Iron	ug/l	3,030	2,200		B	100
PW-C	Lead	ug/l	1.9	**20.7**		B	3
PW-C	Magnesium	ug/l	53,700	44,800			5,000
PW-C	Manganese	ug/l	35	31.1			10
PW-C	Mercury	ug/l	0.20		U		0.64
PW-C	Nickel	ug/l	1.0		U		40
PW-C	Potassium	ug/l	2,730	1,950	BE	J	5,000
PW-C	Selenium	ug/l	2.0	**2.4**	UN	UJ	5
PW-C	Silver	ug/l	1.0		U		5
PW-C	Sodium	ug/l	23,300	18,300			5,000

BOLD = Exceedance of Highest Baseline Detection

NA = Not Applicable

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CAS/ALC
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2090603.030401

Residential Well Inorganic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-C	Thallium	ug/l	3.0		U		10
PW-C	Vanadium	ug/l	1.0		U		20
PW-C	Zinc	ug/l	79	35.4			20
PW-D	Aluminum	ug/l	125		U		200
PW-D	Antimony	ug/l	1.0		U		10
PW-D	Arsenic	ug/l	2.0		U		10
PW-D	Barium	ug/l	157	137	B		200
PW-D	Beryllium	ug/l	1.0		U		5
PW-D	Cadmium	ug/l	1.1		U		5
PW-D	Calcium	ug/l	96,800	88,700			5,000
PW-D	Chromium (Total)	ug/l	1.0		U		5
PW-D	Cobalt	ug/l	1.0		U		5
PW-D	Copper	ug/l	155	3.2	B	UB	5
PW-D	Cyanide (Total)	ug/l	10		U		10
PW-D	Iron	ug/l	3,190	1,890		B	100
PW-D	Lead	ug/l	23		U		3
PW-D	Magnesium	ug/l	50,900	45,900			5,000
PW-D	Manganese	ug/l	48	30.7			10
PW-D	Mercury	ug/l	0.20		U		0.64
PW-D	Nickel	ug/l	4.3		U		40
PW-D	Potassium	ug/l	2,660	1,890	BE	J	5,000
PW-D	Selenium	ug/l	2.0	**2.4**	UN	UJ	5
PW-D	Silver	ug/l	1.0		U		5
PW-D	Sodium	ug/l	24,100	18,400			5,000
PW-D	Thallium	ug/l	3.0		U		10
PW-D	Vanadium	ug/l	1.0		U		20
PW-D	Zinc	ug/l	1,580	7.2	B		20
PW-Re	Aluminum	ug/l			U		200
PW-Re	Antimony	ug/l			U		10
PW-Re	Arsenic	ug/l			U		10
PW-Re	Barium	ug/l		160	B		200
PW-Re	Beryllium	ug/l			U		5
PW-Re	Cadmium	ug/l			U		5
PW-Re	Calcium	ug/l		84,300			5,000
PW-Re	Chromium (Total)	ug/l			U		5
PW-Re	Cobalt	ug/l			U		5
PW-Re	Copper	ug/l		1.3	B	UB	5
PW-Re	Cyanide (Total)	ug/l			U		10
PW-Re	Iron	ug/l		1,650		B	100
PW-Re	Lead	ug/l			U		3
PW-Re	Magnesium	ug/l		45,800			5,000
PW-Re	Manganese	ug/l		22.8			10
PW-Re	Mercury	ug/l			U		0.64
PW-Re	Nickel	ug/l			U		40
PW-Re	Potassium	ug/l		2,160	BE	J	5,000

BOLD = Exceedance of Highest Baseline Detection

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CAS/ALC
J:\209\0603 ACS\Database\GW Monitoring\Access2000versions\ACS GW Database_2000.mdb [rptPWNewResultsInorg]
2090603.030401

Residential Well Inorganic Results - September 2004
Comparison to Maximum Baseline Detections
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	September 2003			
				Result	LQ	DQ	Detect Limit
PW-Re	Selenium	ug/l		2.4	UN	UJ	5
PW-Re	Silver	ug/l			U		5
PW-Re	Sodium	ug/l		24,200			5,000
PW-Re	Thallium	ug/l			U		10
PW-Re	Vanadium	ug/l			U		20
PW-Re	Zinc	ug/l			U		20
PW-T	Aluminum	ug/l			U		200
PW-T	Antimony	ug/l			U		10
PW-T	Arsenic	ug/l			U		10
PW-T	Barium	ug/l		139	B		200
PW-T	Beryllium	ug/l			U		5
PW-T	Cadmium	ug/l			U		5
PW-T	Calcium	ug/l		89,300			5,000
PW-T	Chromium (Total)	ug/l			U		5
PW-T	Cobalt	ug/l			U		5
PW-T	Copper	ug/l			U		5
PW-T	Cyanide (Total)	ug/l			U		10
PW-T	Iron	ug/l		2,330		B	100
PW-T	Lead	ug/l			U		3
PW-T	Magnesium	ug/l		48,200			5,000
PW-T	Manganese	ug/l		32.4			10
PW-T	Mercury	ug/l			U		0.64
PW-T	Nickel	ug/l			U		40
PW-T	Potassium	ug/l		2,110	BE	J	5,000
PW-T	Selenium	ug/l		2.4	UN	UJ	5
PW-T	Silver	ug/l			U		5
PW-T	Sodium	ug/l		20,600			5,000
PW-T	Thallium	ug/l			U		10
PW-T	Vanadium	ug/l			U		20
PW-T	Zinc	ug/l		15.3	B		20

BOLD = Exceedance of Highest Baseline Detection
NA = Not Applicable

For an explanation of Laboratory Qualifiers (LQ) and Data Validation Qualifier (DQ), please see Appendices C and D.

CAS/ALC
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2090603.030401

Appendix B

MWH

Appendix B
Concentration Vs. Time Plots

Upper Aquifer Monitoring Wells

MW06
MW11
MW14
MW15
MW17
MW19
MW42
MW43
MW44
MW45
MW48
MW49

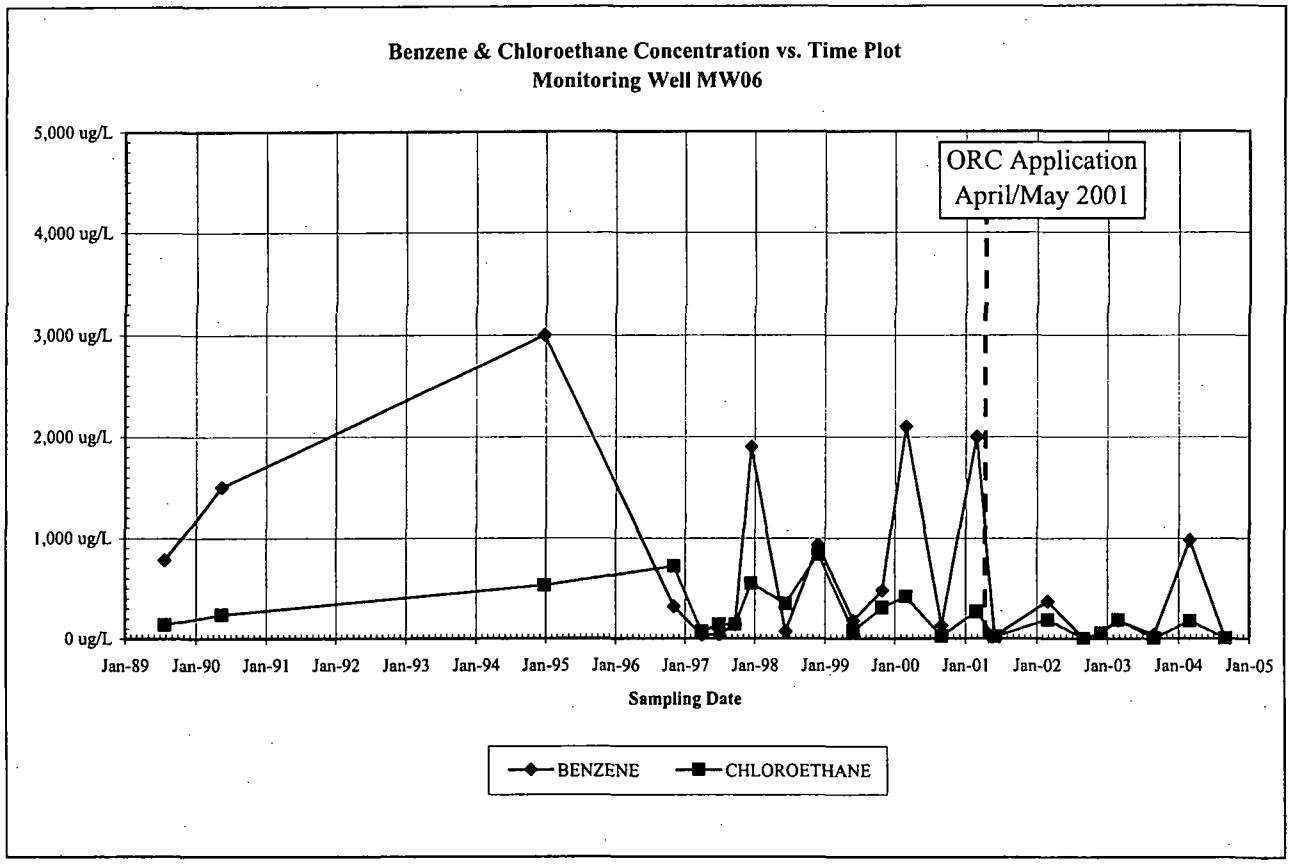
Lower Aquifer Monitoring Wells

MW08
MW09R
MW10C
MW23
MW28
MW29
MW30
MW31
MW32
MW33
MW51
MW52
MW53
MW54R
MW55
MW56

Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW06

DATE	BENZENE	CHLOROETHANE
BASELINE	**320**	**720**
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 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
September-03	39 ug/L	BDL
March-04	980 ug/L	180 ug/L
September-04	2.7 ug/L	2.6 ug/L

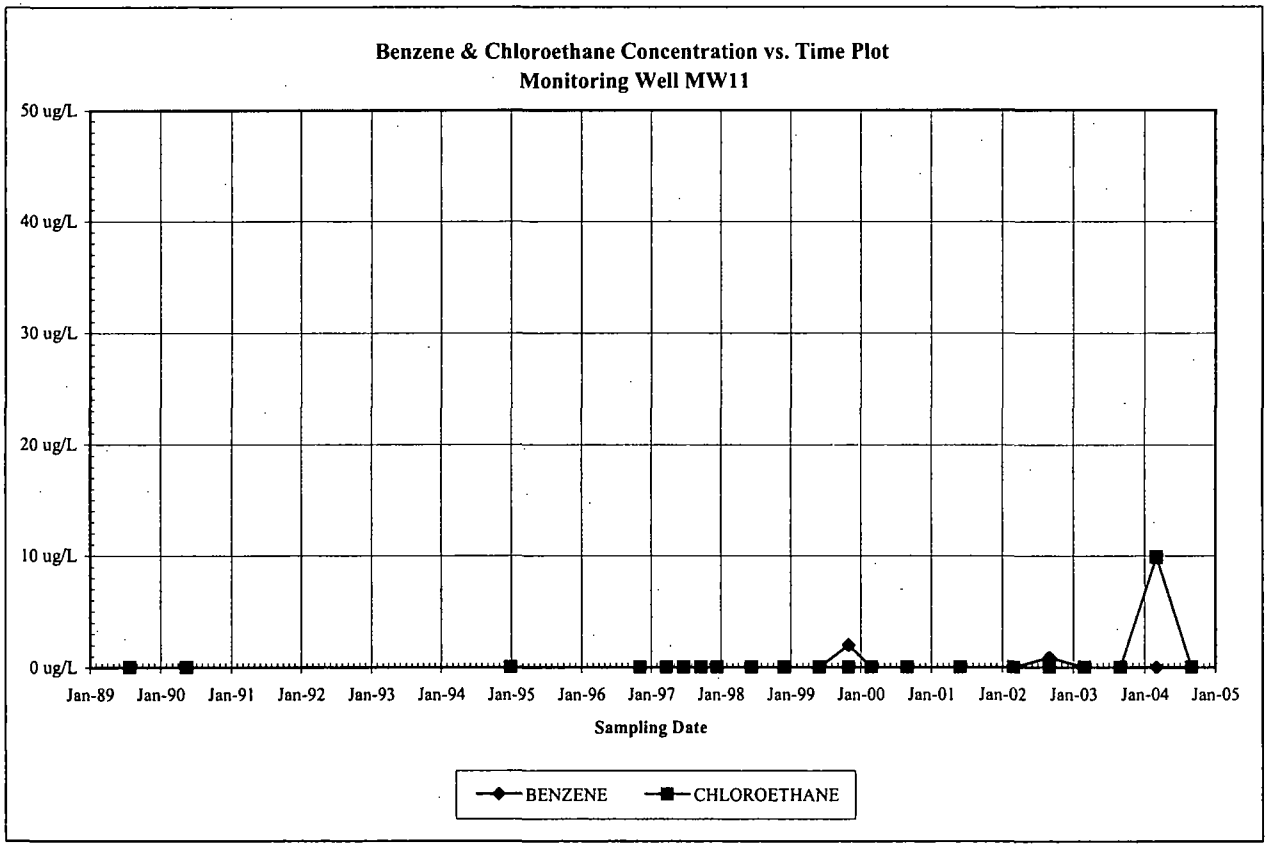
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW11

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89	BDL	BDL
May-90	BDL	BDL
January-95	BDL	BDL
November-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	2 ug/L	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	0.9 ug/L	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	9.9
September-04	BDL	BDL

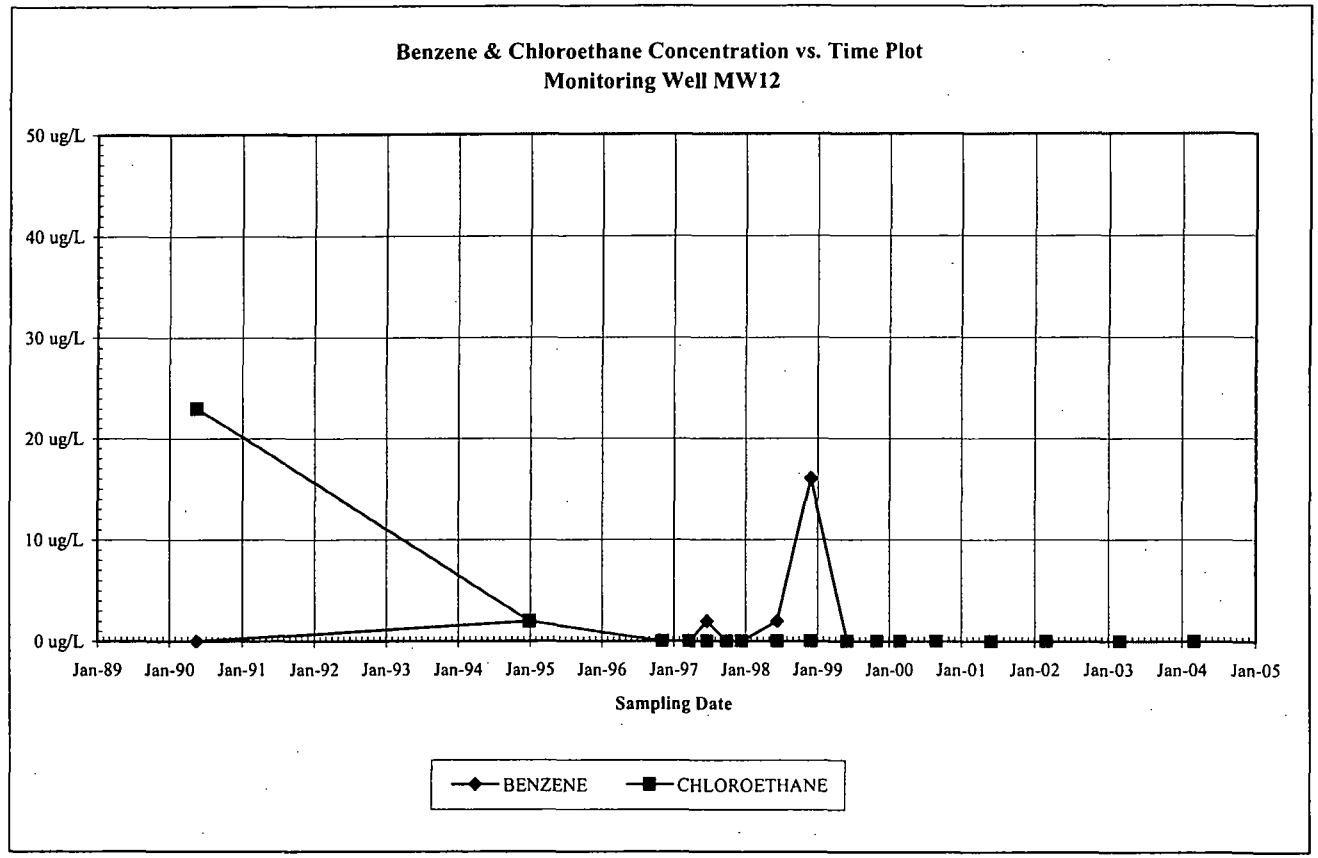
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW12

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90	BDL	23 ug/L
January-95	2 ug/L	2 ug/L
November-96	BDL	BDL
March-97	BDL	BDL
June-97	2 ug/L	BDL
October-97	BDL	BDL
December-97	BDL	BDL
June-98	2 ug/L	BDL
December-98	16 ug/L	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
March-03	BDL	BDL
March-04	BDL	BDL

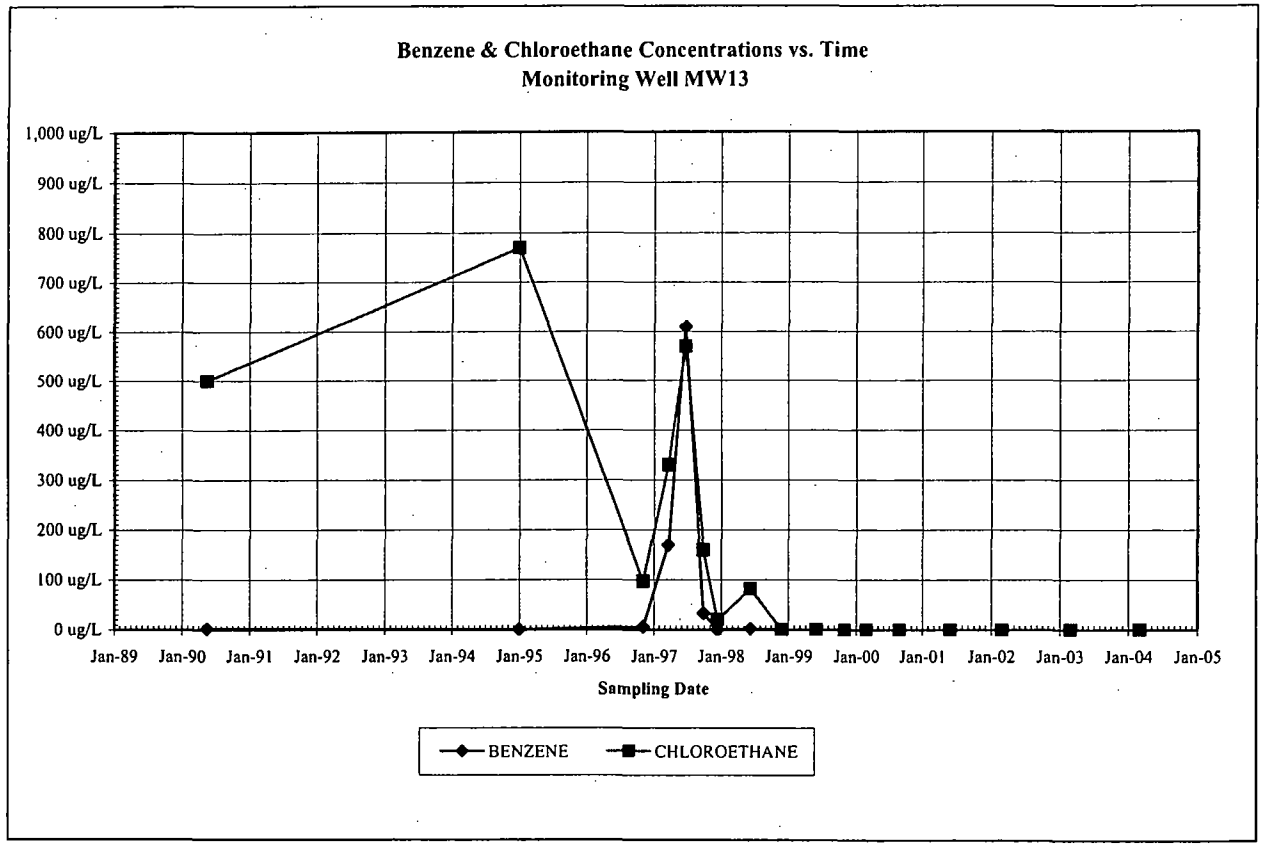
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW13

DATE	BENZENE	CHLOROETHANE
BASELINE	**610**	**570**
August-89		
May-90	2 ug/L	500 ug/L
January-95	BDL	770 ug/L
November-96	6 ug/L	97 ug/L
March-97	170 ug/L	330 ug/L
June-97	610 ug/L	570 ug/L
October-97	33 ug/L	160 ug/L
December-97	BDL	20 ug/L
June-98	2 ug/L	82 ug/L
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
March-03	BDL	BDL
March-04	BDL	BDL

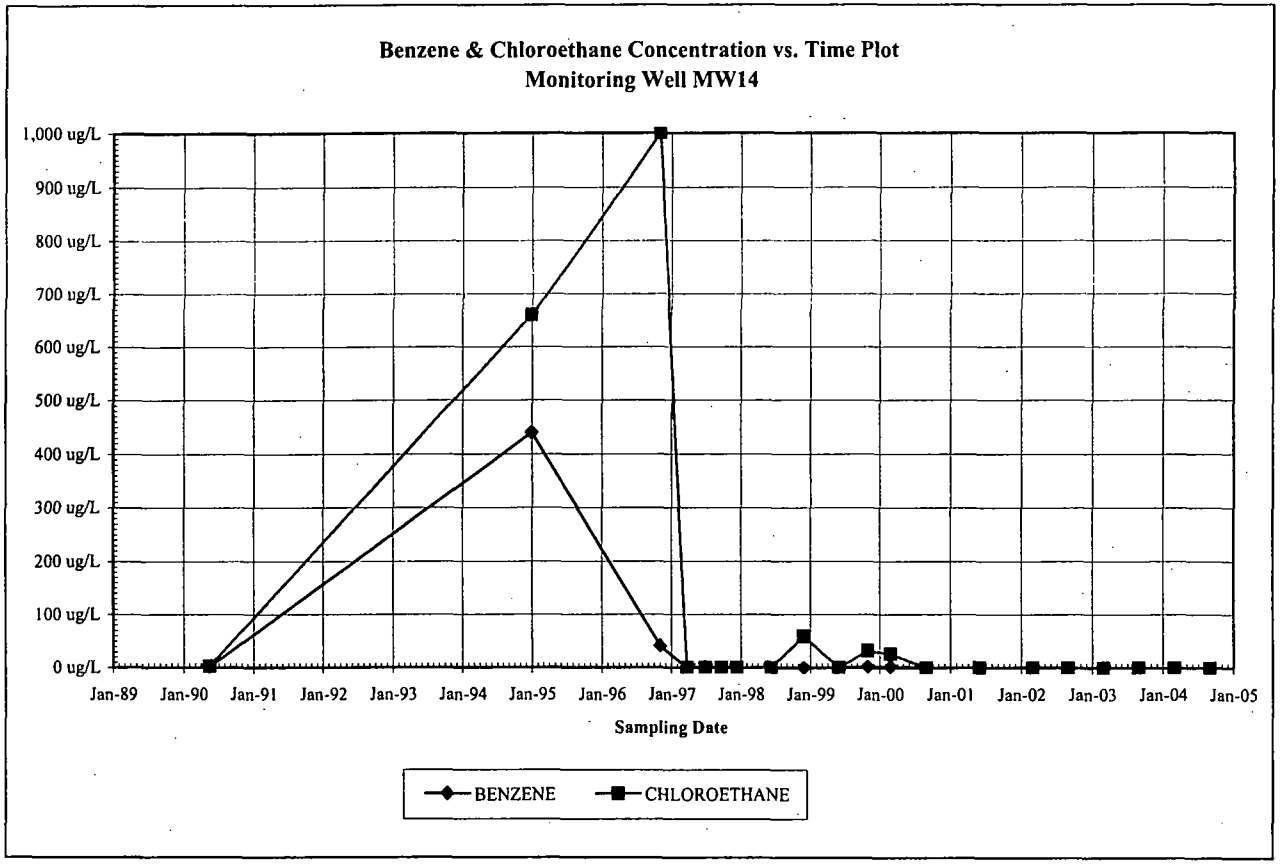
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW14

DATE	BENZENE	CHLOROETHANE
BASELINE	41	1000
August-89		
May-90	2 ug/L	3 ug/L
January-95	440 ug/L	660 ug/L
November-96	41 ug/L	1,000 ug/L
March-97	BDL	BDL
June-97	1 ug/L	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	59 ug/L
June-99	BDL	BDL
November-99	2 ug/L	32 ug/L
March-00	2 ug/L	26 ug/L
September-00	BDL	BDL
June-01	BDL	BDL
March-02	1 ug/L	BDL
September-02	BDL	BDL
March-03	0.7 ug/L	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

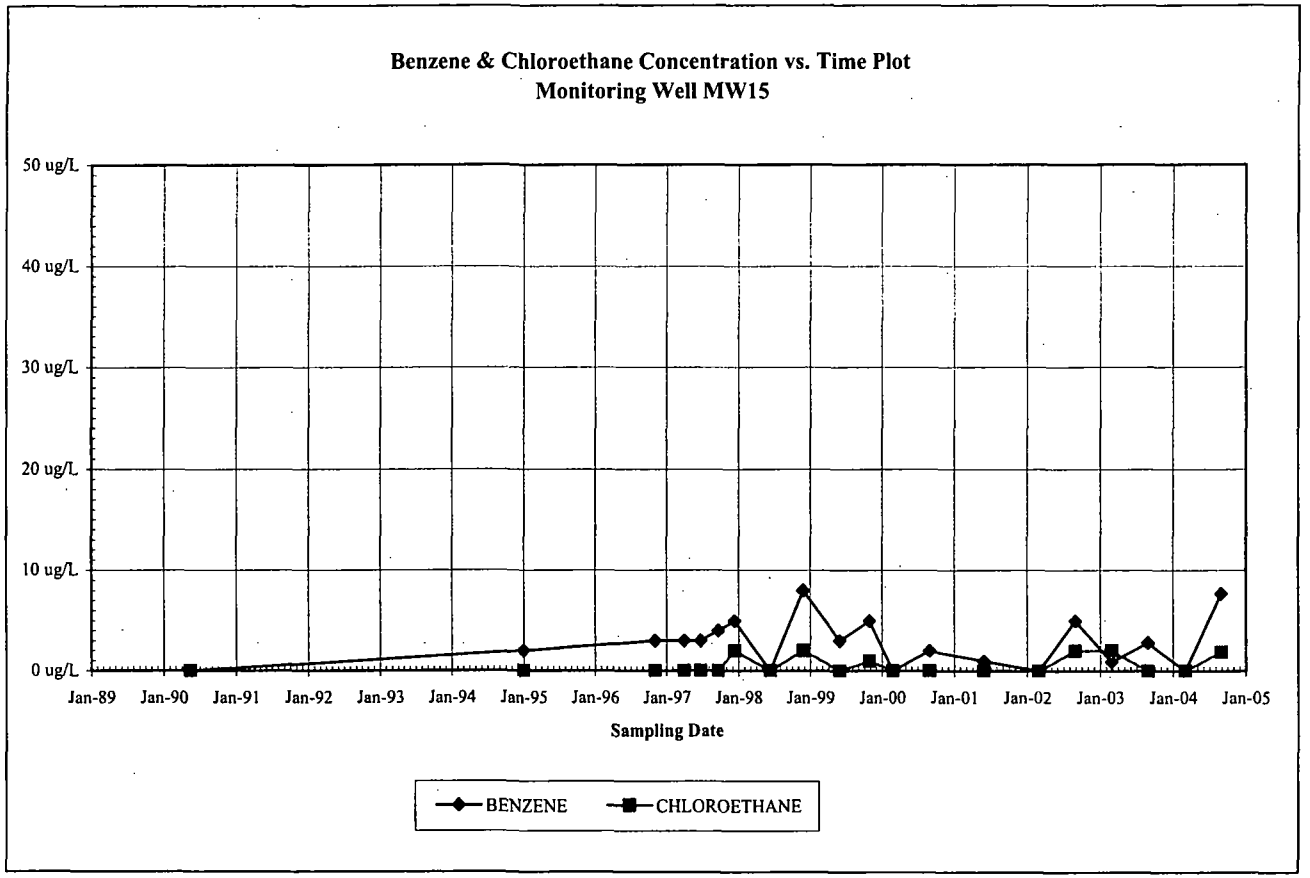
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW15

DATE	BENZENE	CHLOROETHANE
BASELINE	**10**	**10**
August-89		
May-90	BDL	BDL
January-95	2 ug/L	BDL
November-96	3 ug/L	BDL
April-97	3 ug/L	BDL
June-97	3 ug/L	BDL
September-97	4 ug/L	BDL
December-97	5 ug/L	2 ug/L
June-98	BDL	BDL
December-98	8 ug/L	2 ug/L
June-99	3 ug/L	BDL
November-99	5 ug/L	1 ug/L
March-00	BDL	BDL
September-00	2 ug/L	BDL
June-01	1 ug/L	BDL
March-02	BDL	BDL
September-02	5 ug/L	2 ug/L
March-03	1 ug/L	2 ug/L
September-03	2.8 ug/L	BDL
March-04	BDL	BDL
September-04	7.7 ug/L	1.9 ug/L

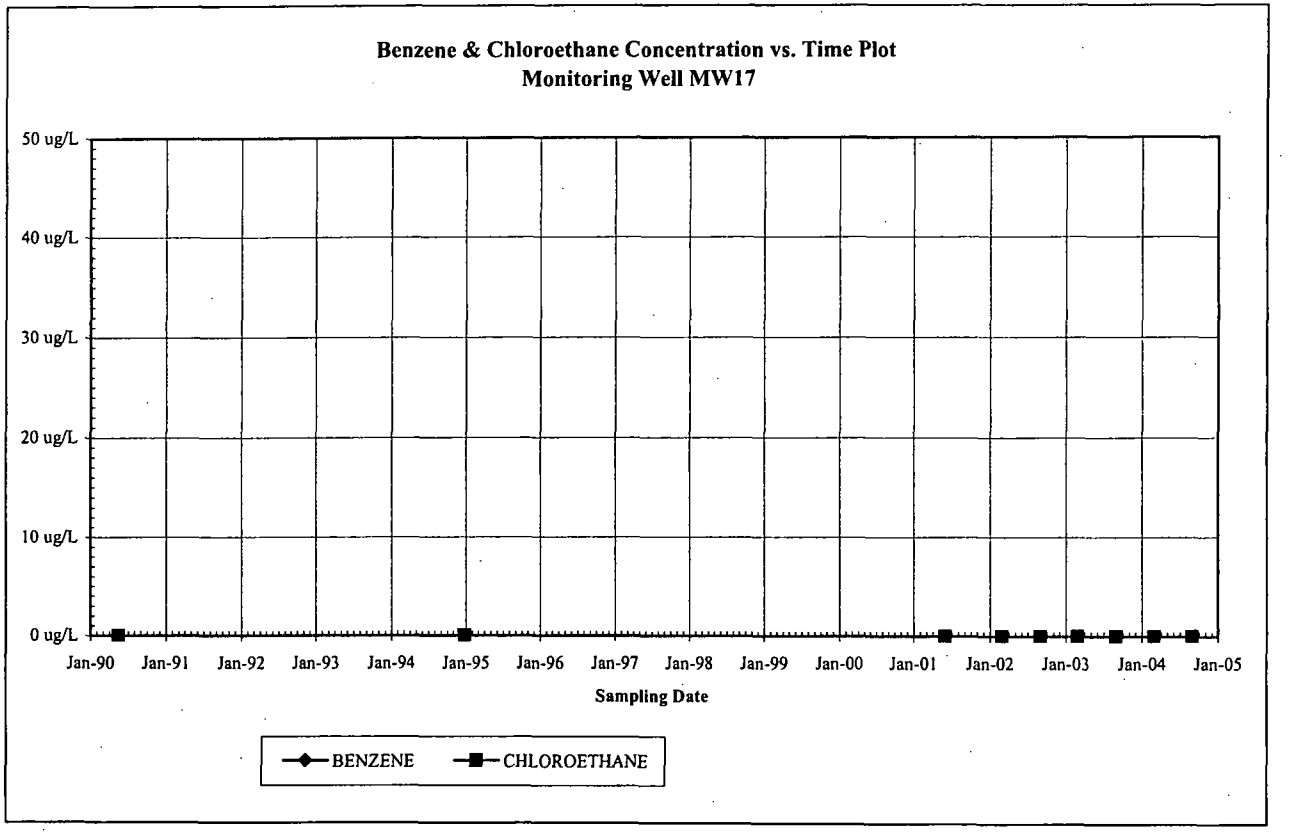
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW17

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
May-90	BDL	BDL
December-94	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

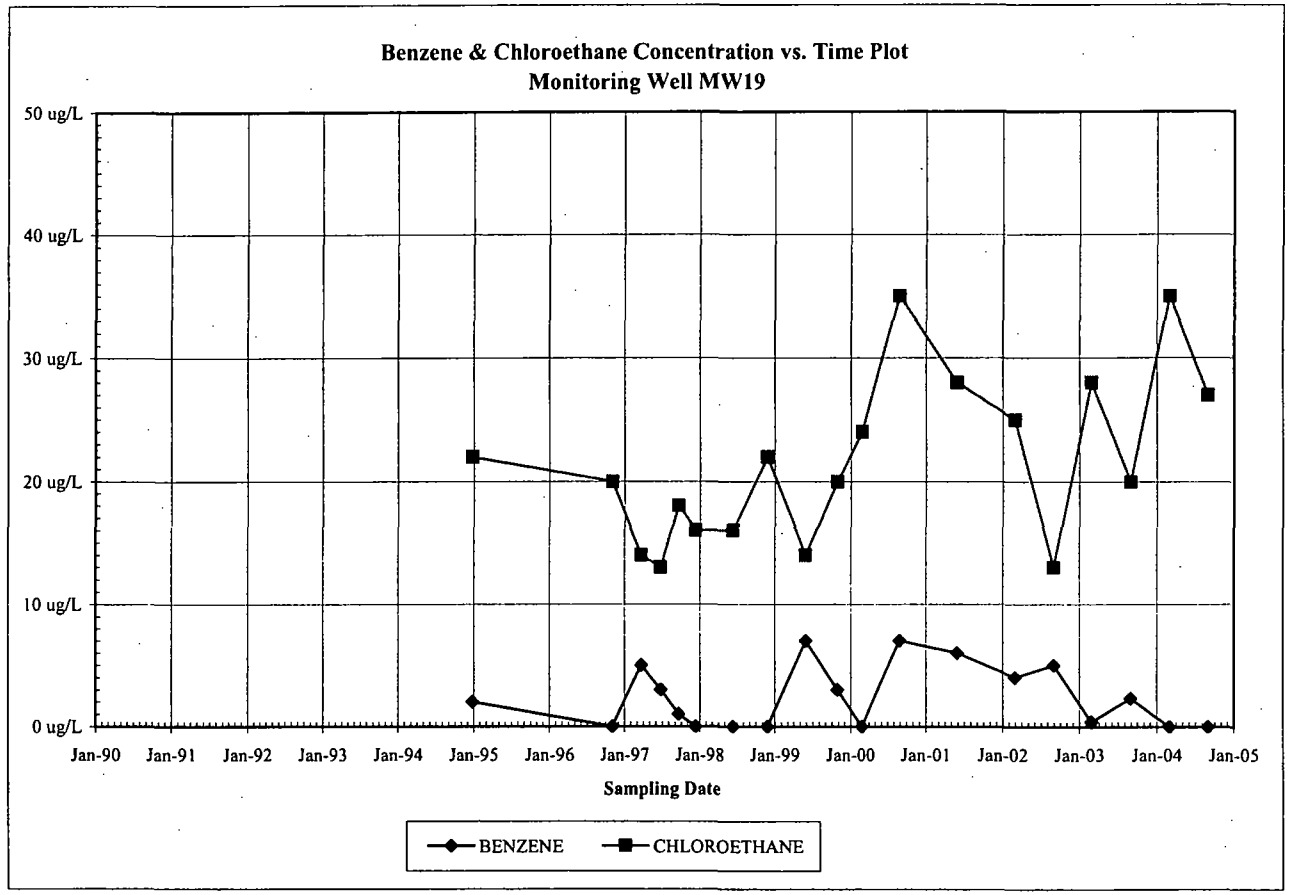
BDL = Below the Detection Limit
Baseline values adopted from nearby abandoned well MW18



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW19

DATE	BENZENE	CHLOROETHANE
BASELINE	10	20
August-89		
May-90		
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
September-03	2.3 ug/L	20 ug/L
March-04	BDL	35 ug/L
September-04	BDL	27 ug/L

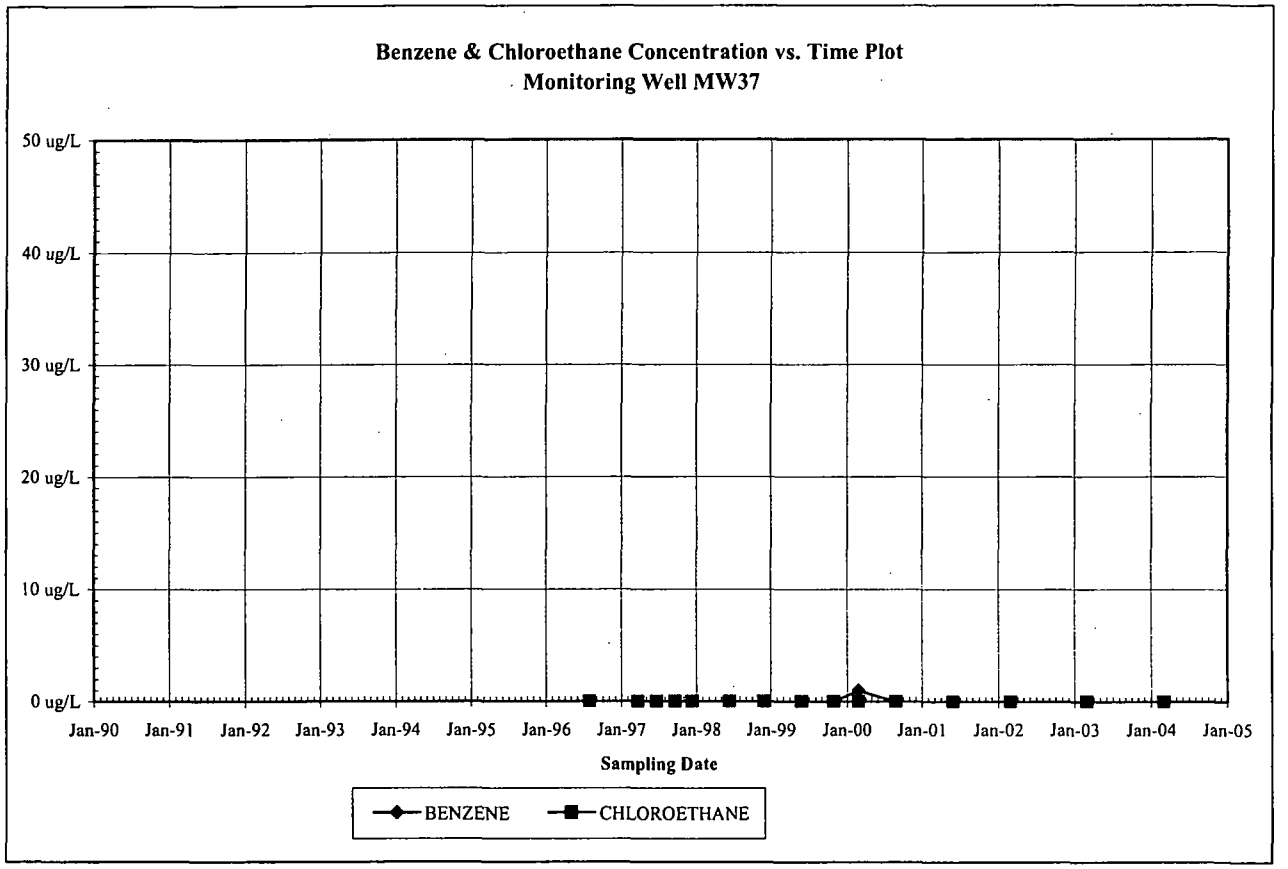
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW37

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	1 ug/L	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
March-03	BDL	BDL
March-04	BDL	BDL

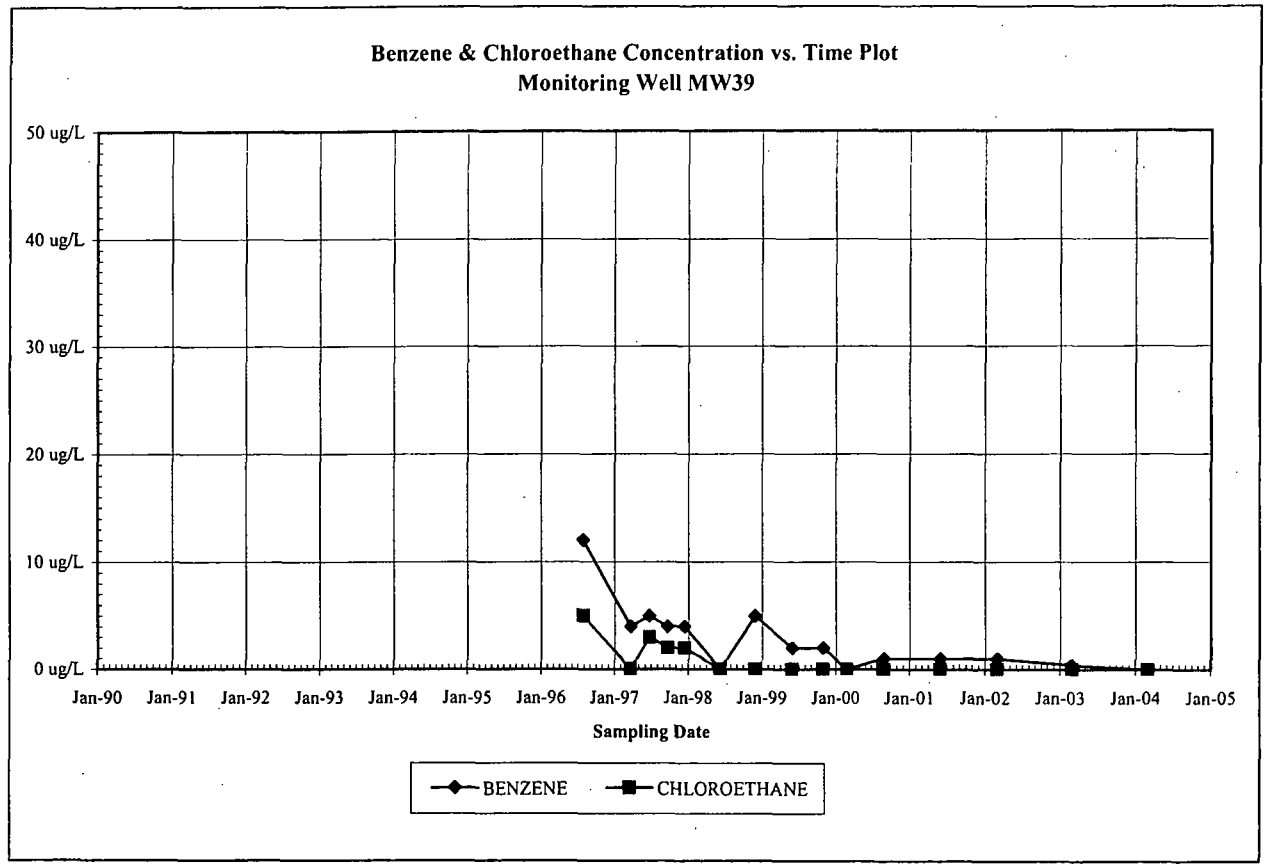
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW39

DATE	BENZENE	CHLOROETHANE
BASELINE	12	10
August-89		
May-90		
December-94		
August-96	12 ug/L	5 ug/L
March-97	4 ug/L	BDL
June-97	5 ug/L	3 ug/L
September-97	4 ug/L	2 ug/L
December-97	4 ug/L	2 ug/L
June-98	BDL	BDL
December-98	5 ug/L	BDL
June-99	2 ug/L	BDL
November-99	2 ug/L	BDL
March-00	BDL	BDL
September-00	1 ug/L	BDL
June-01	1 ug/L	BDL
March-02	1 ug/L	BDL
March-03	0.4 ug/L	BDL
March-04	BDL	BDL

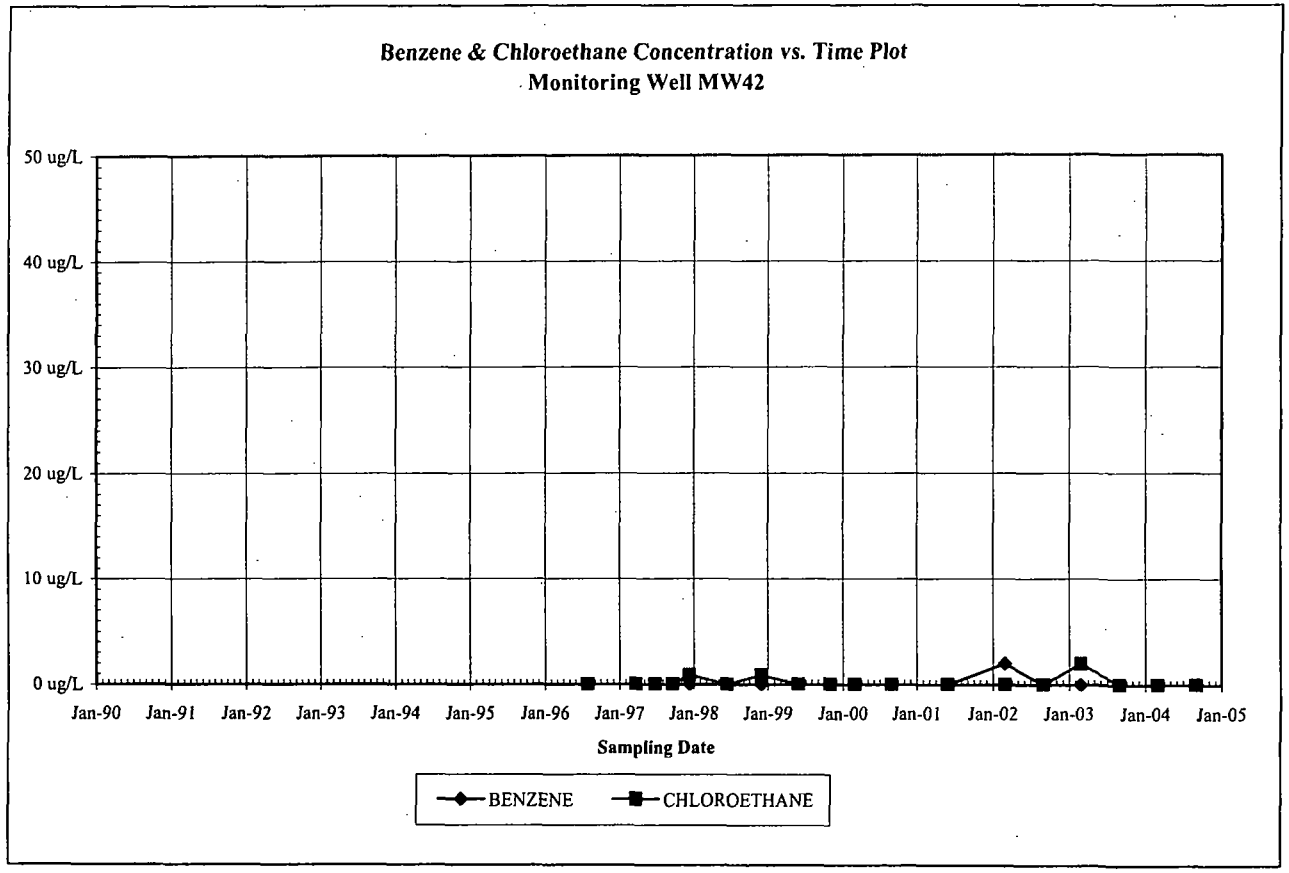
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW42

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	0.9 ug/L
June-98	BDL	BDL
December-98	BDL	0.9 ug/L
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	2 ug/L	BDL
September-02	BDL	BDL
March-03	BDL	2 ug/L
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

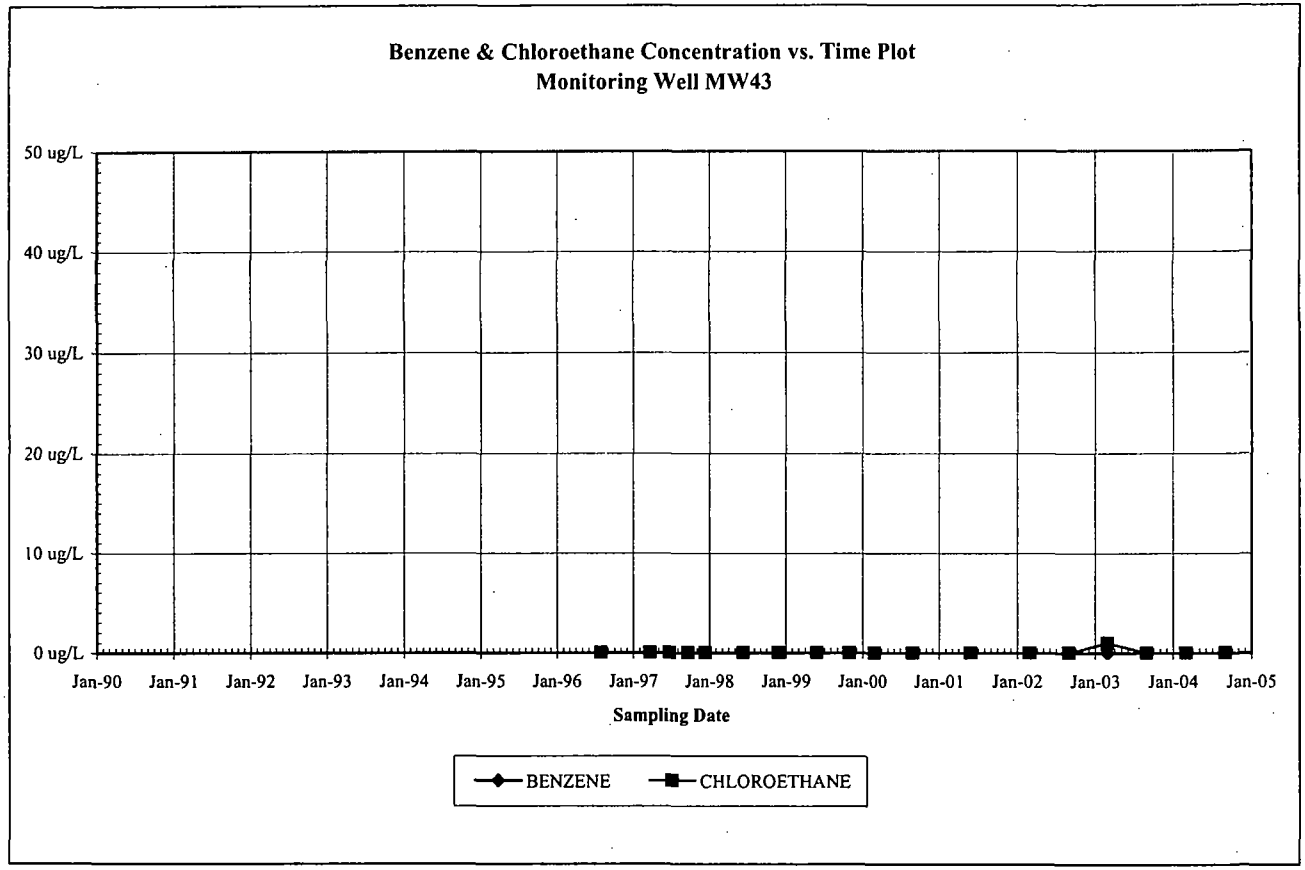
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW43

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	1 ug/L
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

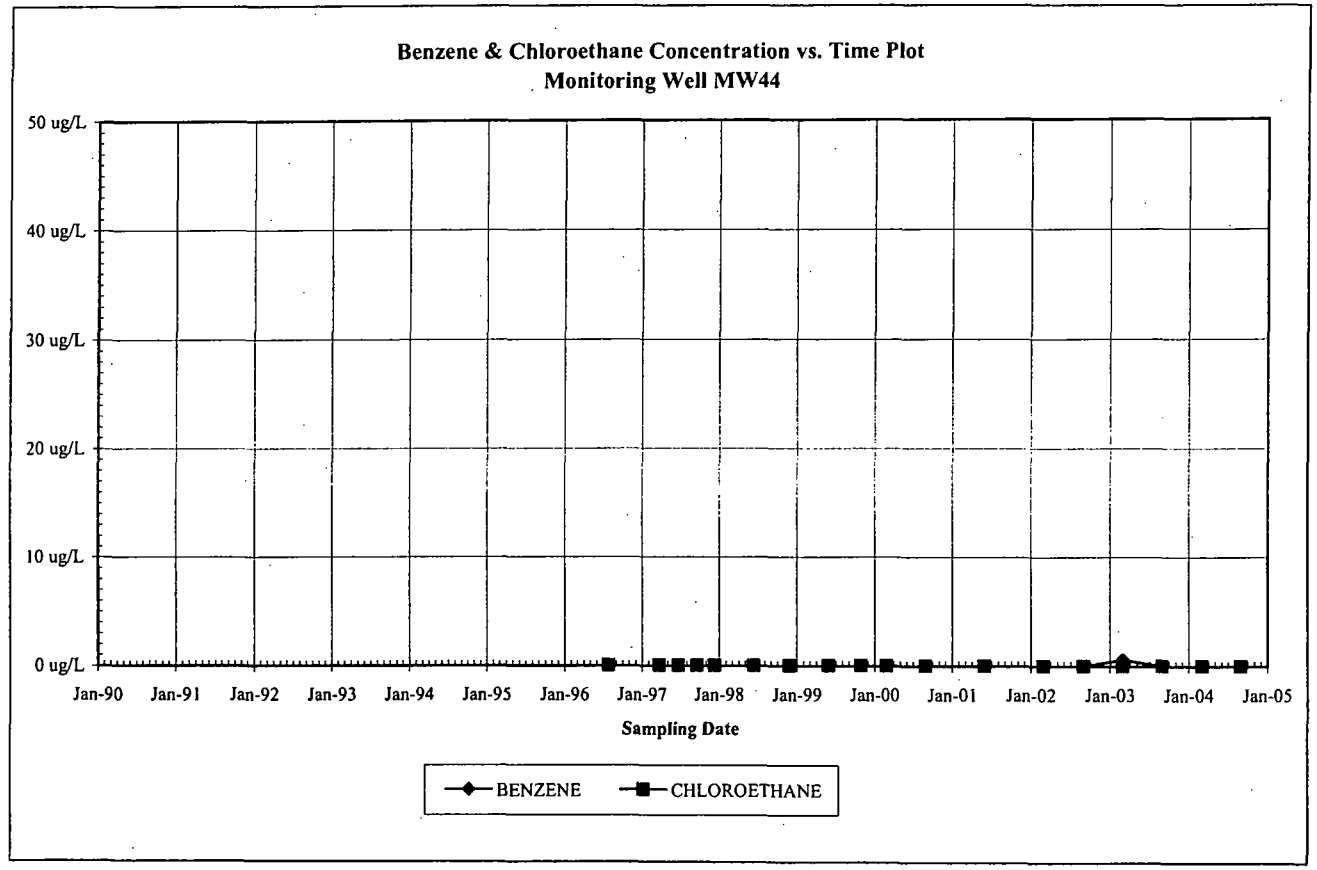
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW44

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	0.6 ug/L	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

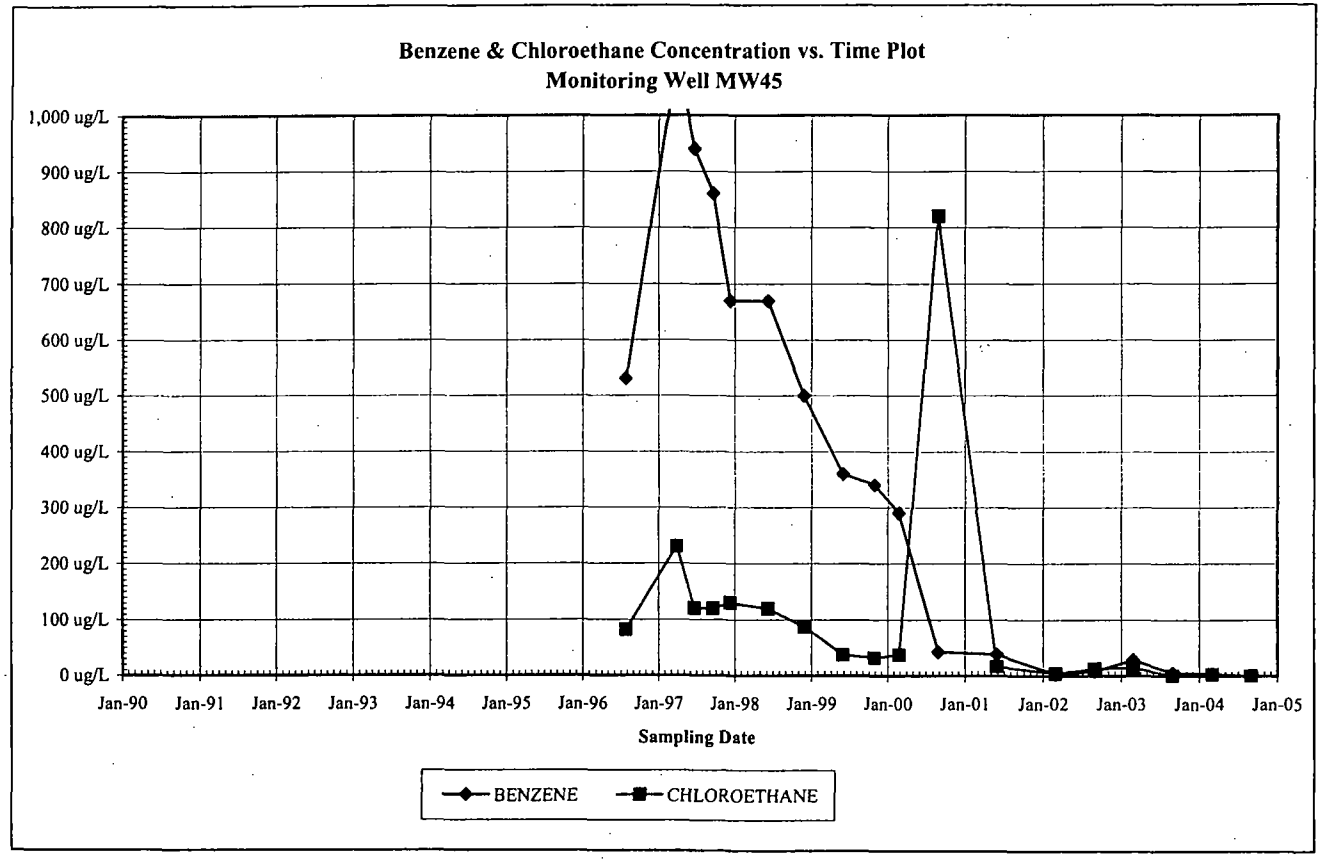
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW45

DATE	BENZENE	CHLOROETHANE
BASELINE	1045	215
August-89		
May-90		
December-94		
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
September-03	5 ug/L	BDL
March-04	3.7 ug/L	2.7 ug/L
September-04	BDL	BDL

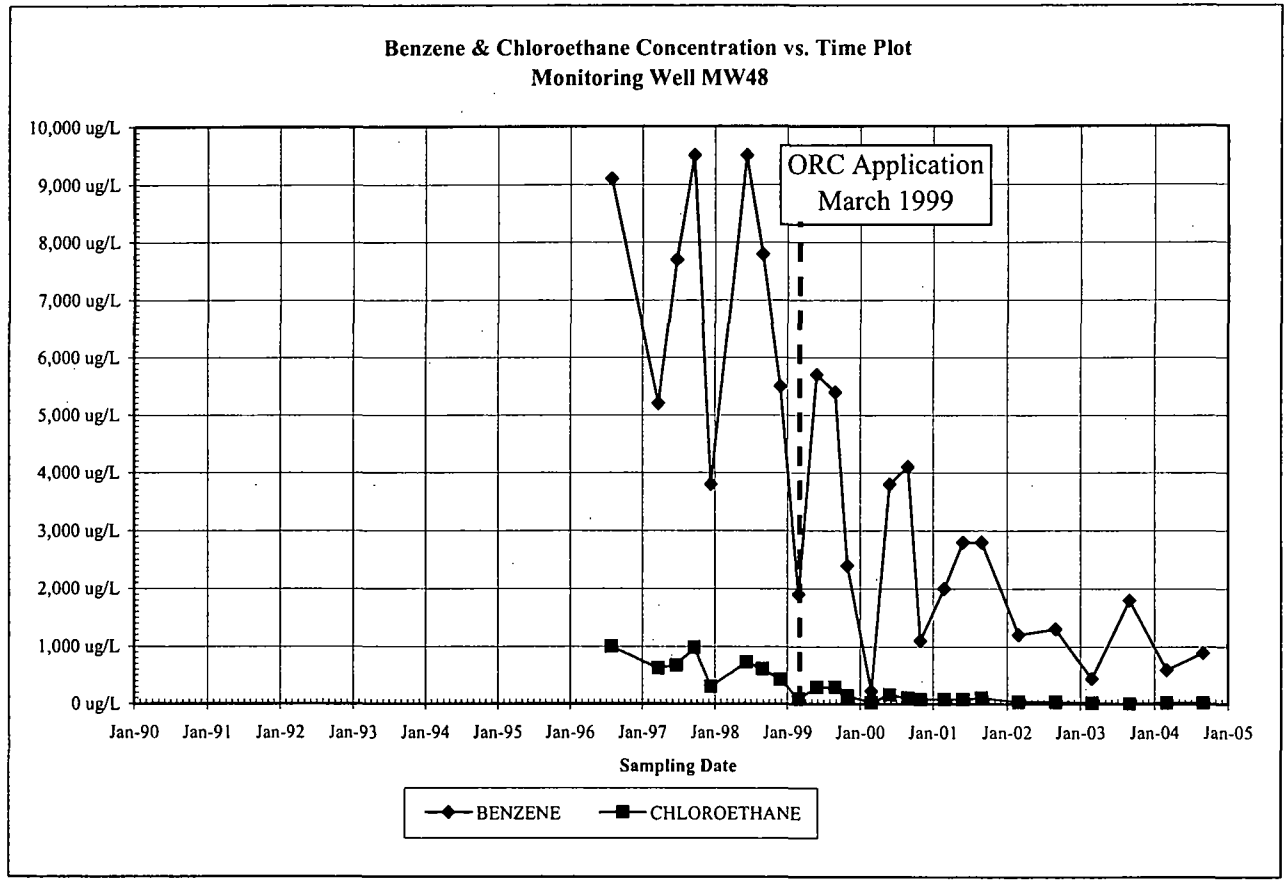
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW48

DATE	BENZENE	CHLOROETHANE
BASELINE	9500	1000
August-89		
May-90		
December-94		
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
September-03	1,800 ug/L	BDL
March-04	590 ug/L	22 ug/L
September-04	890 ug/L	20 ug/L

BDL = Below the Detection Limit



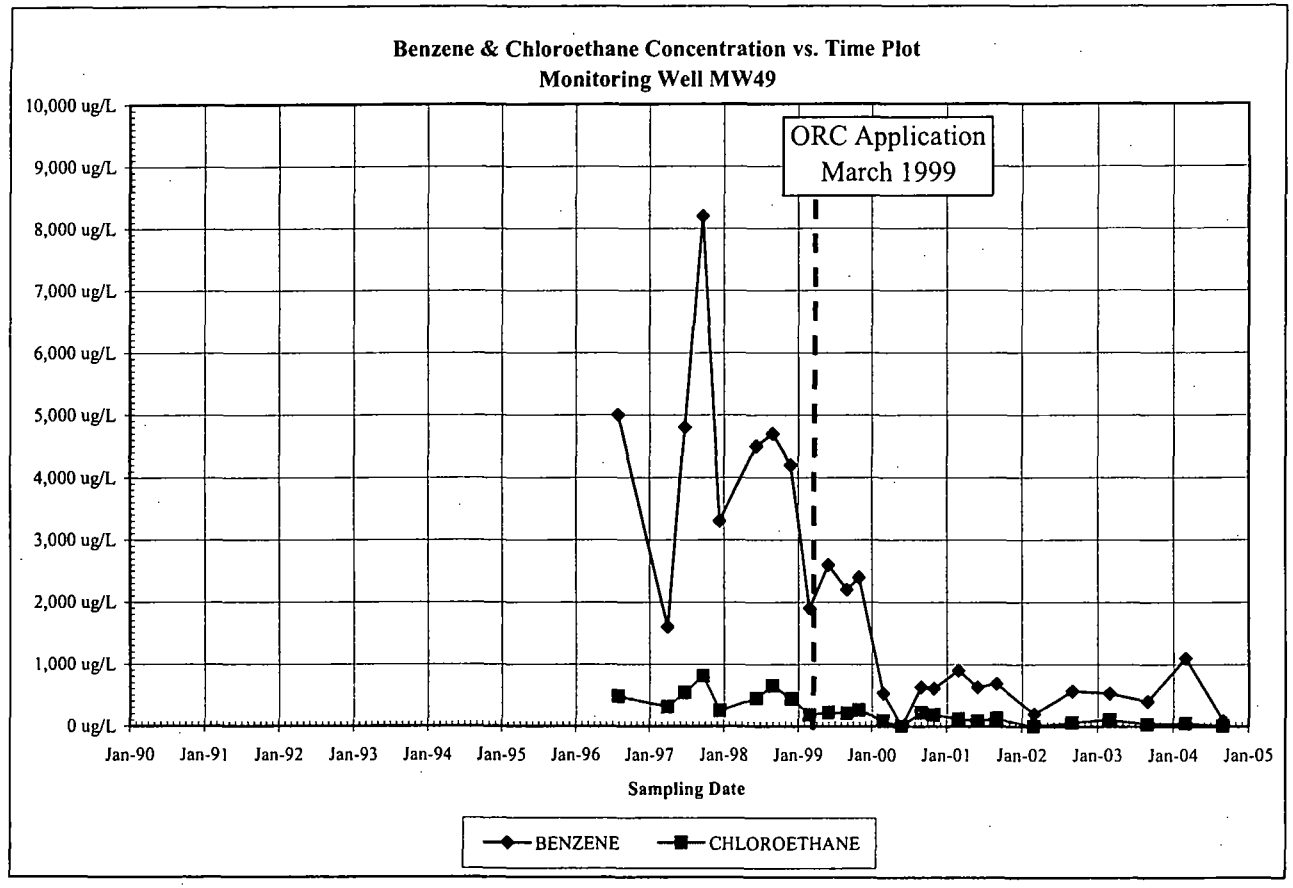
CAS/ALC
J:209\0603 ACS\Database\Timetrnd_GWMP_UA_Electronic.xls[MW48]

12/15/04

Concentration vs. Time Plot for
Upper Aquifer Monitoring Well MW49

DATE	BENZENE	CHLOROETHANE
BASELINE	6750	715
August-89		
May-90		
December-94		
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
September-03	400 ug/L	38 ug/L
March-04	1,100 ug/L	52 ug/L
September-04	90 ug/L	11 ug/L

BDL = Below the Detection Limit



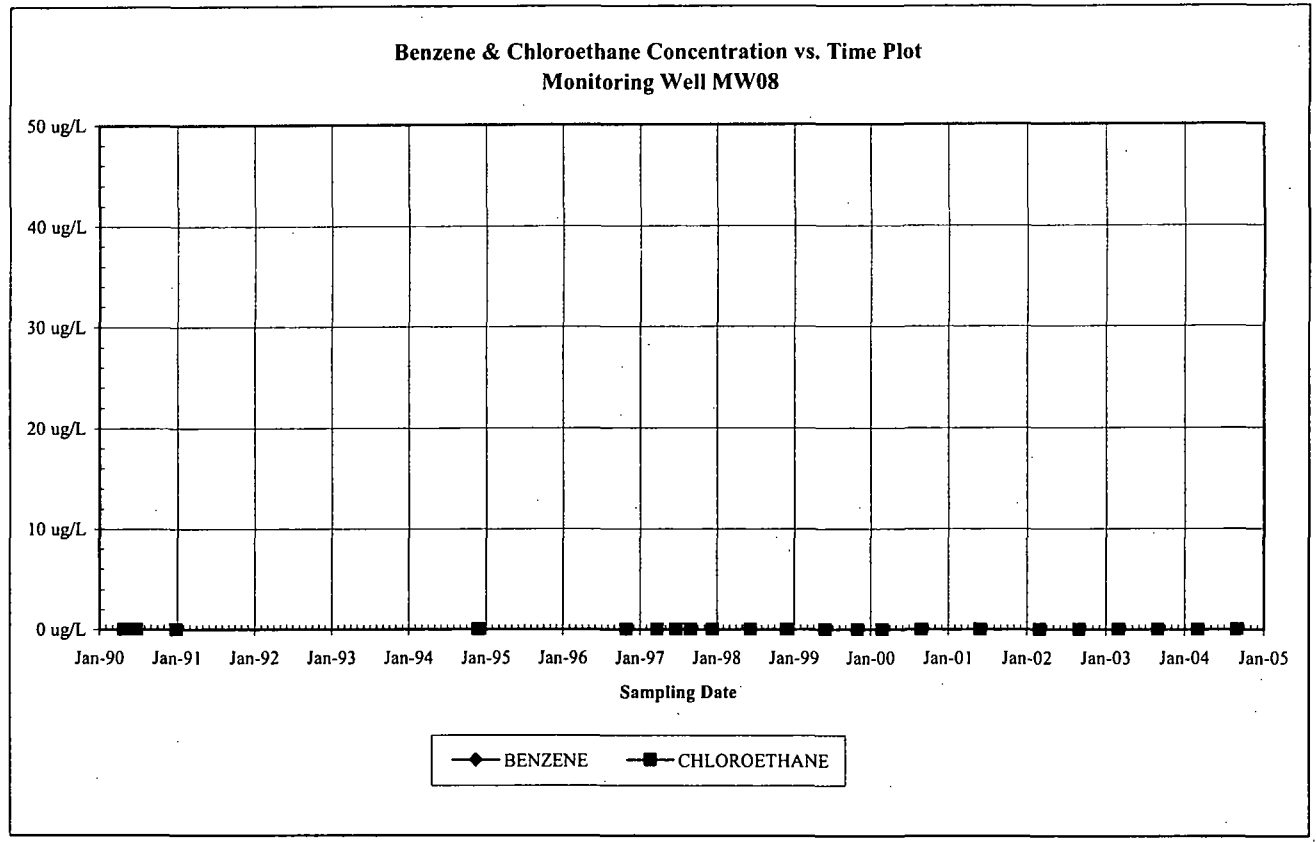
CAS/ALC
J:209\0603 ACS\Database\Timetrnd_GWMP_UA_Electronic.xls[MW49]

12/15/04

Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW08

DATE	BENZENE	CHLOROETHANE
BASELINE	**10**	**10**
May-90	BDL	BDL
July-90	BDL	BDL
January-91	BDL	BDL
December-94	BDL	BDL
November-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

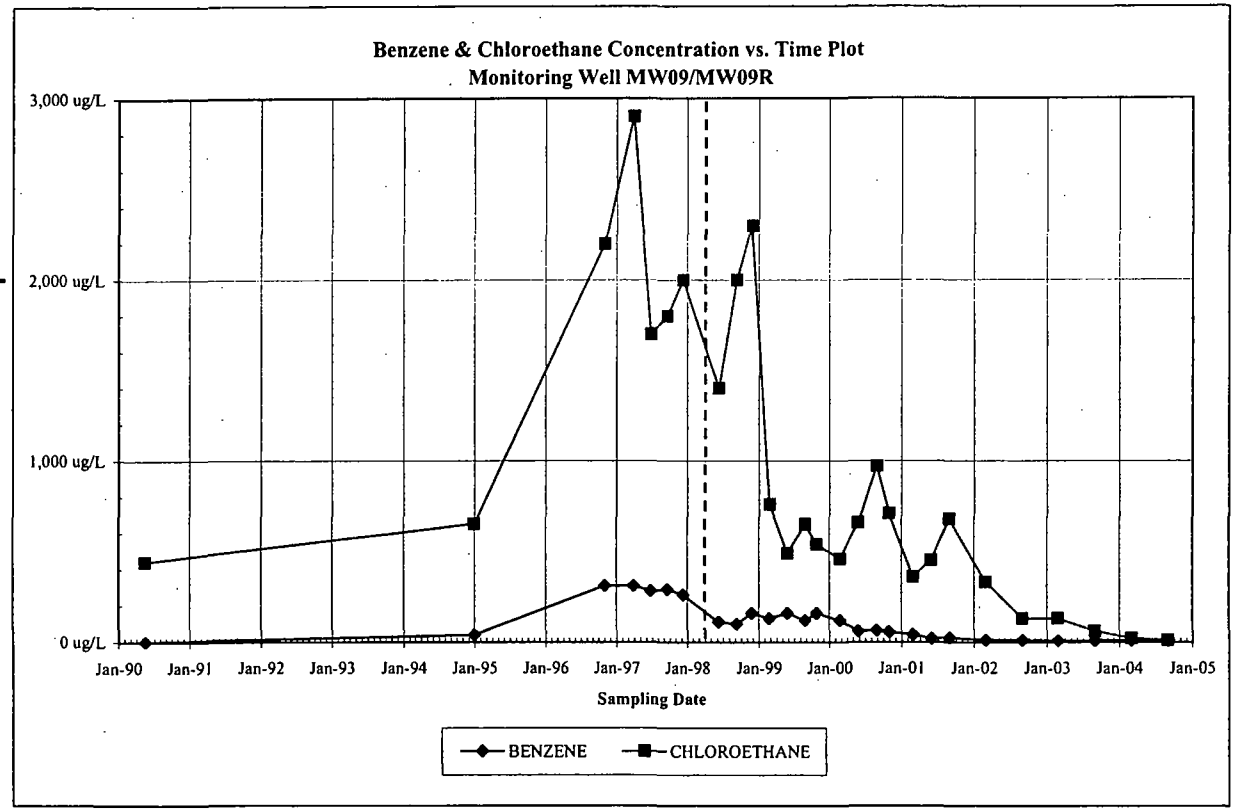
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW09/MW09R

DATE	BENZENE	CHLOROETHANE	
BASELINE	**310**	**2900**	
August-89			
May-90	BDL	440 ug/L	
January-95	40 ug/L	650 ug/L	
November-96	310 ug/L	2,200 ug/L	
April-97	310 ug/L	2,900 ug/L	
June-97	280 ug/L	1,700 ug/L	
September-97	290 ug/L	1,800 ug/L	
December-97	260 ug/L	2,000 ug/L	MW09
June-98	110 ug/L	1,400 ug/L	MW09R
September-98	100 ug/L	2,000 ug/L	
December-98	160 ug/L	2,300 ug/L	
March-99	130 ug/L	760 ug/L	
June-99	160 ug/L	490 ug/L	
September-99	120 ug/L	650 ug/L	
November-99	160 ug/L	540 ug/L	
March-00	120 ug/L	460 ug/L	
June-00	60 ug/L	660 ug/L	
September-00	65 ug/L	970 ug/L	
November-00	55 ug/L	710 ug/L	
March-01	41 ug/L	360 ug/L	
June-01	19 ug/L	450 ug/L	
September-01	23 ug/L	680 ug/L	
March-02	11 ug/L	330 ug/L	
September-02	9 ug/L	130 ug/L	
March-03	8 ug/L	130 ug/L	
September-03	6.6 ug/L	61 ug/L	
March-04	8.3 ug/L	22 ug/L	
September-04	6.5 ug/L	11 ug/L	

BDL = Below the Detection Limit

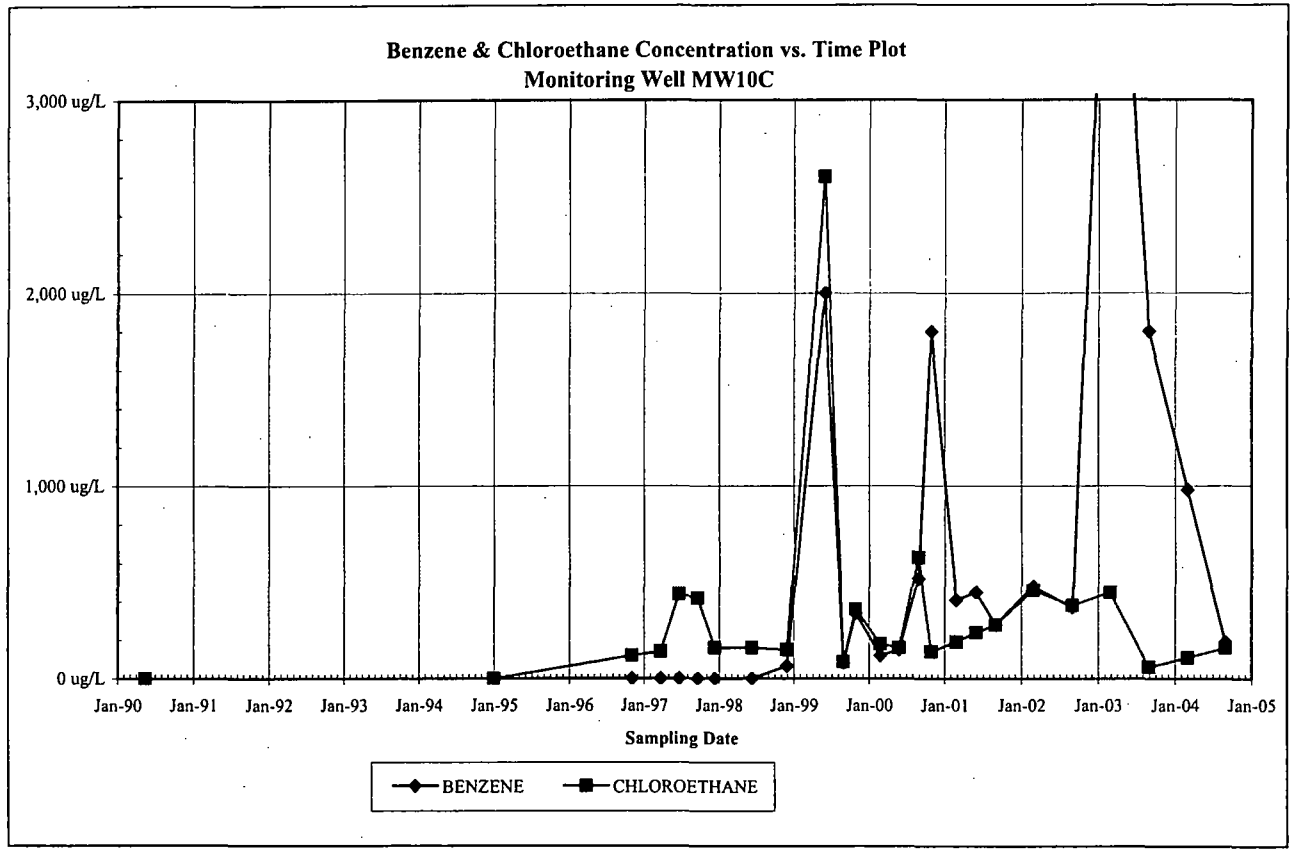


------ Line indicates change to replacement well

Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW10C

DATE	BENZENE	CHLOROETHANE
BASELINE	150	420
August-89		
May-90	BDL	BDL
January-95	BDL	BDL
November-96	BDL	120 ug/L
March-97	BDL	140 ug/L
June-97	BDL	440 ug/L
September-97	BDL	420 ug/L
December-97	BDL	160 ug/L
June-98	BDL	160 ug/L
December-98	66 ug/L	150 ug/L
June-99	2,000 ug/L	2,600 ug/L
September-99	83 ug/L	88 ug/L
November-99	340 ug/L	360 ug/L
March-00	120 ug/L	180 ug/L
June-00	150 ug/L	160 ug/L
September-00	520 ug/L	630 ug/L
November-00	1,800 ug/L	140 ug/L
March-01	410 ug/L	190 ug/L
June-01	450 ug/L	240 ug/L
September-01	280 ug/L	280 ug/L
March-02	480 ug/L	460 ug/L
September-02	370 ug/L	380 ug/L
March-03	4,800 ug/L	450 ug/L
September-03	1,800 ug/L	60 ug/L
March-04	980 ug/L	110 ug/L
September-04	190 ug/L	160 ug/L

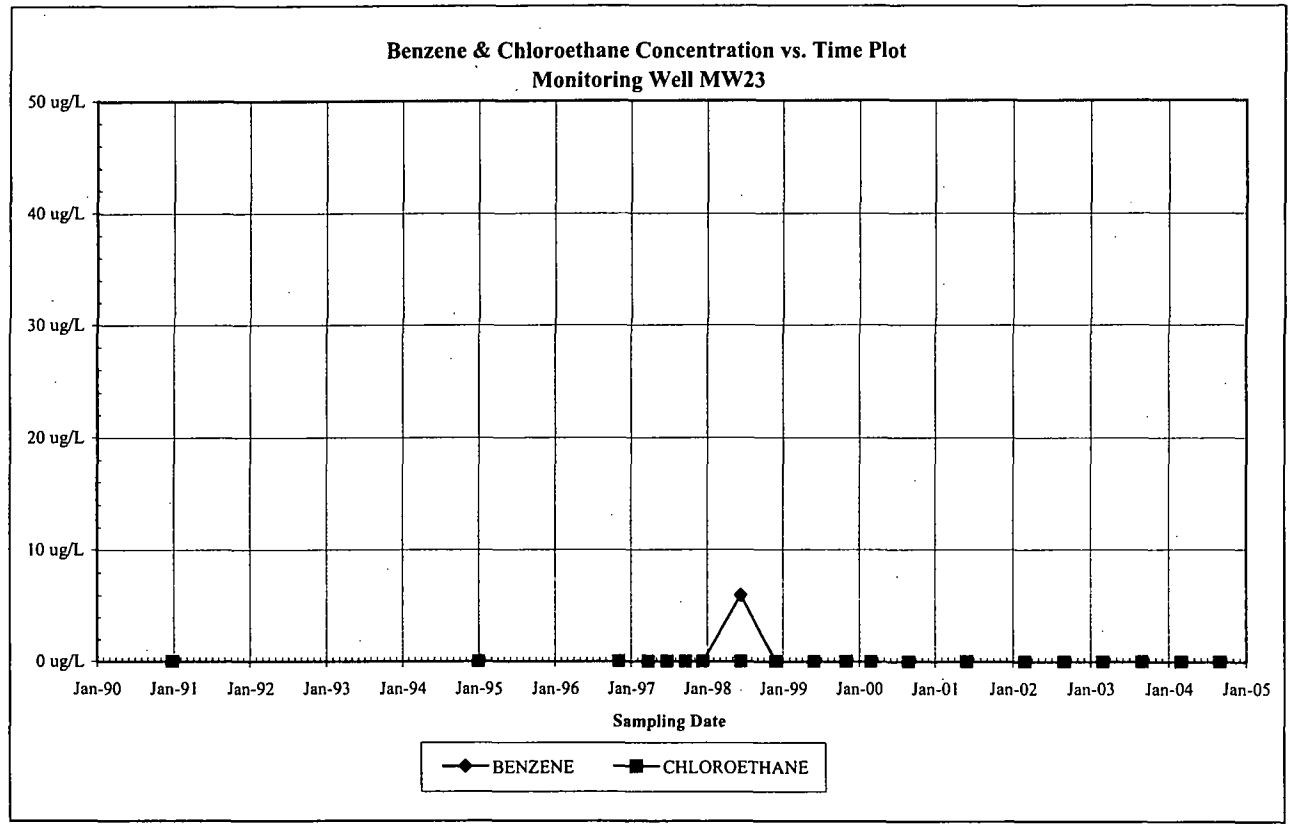
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW23

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
January-91	BDL	BDL
January-95	BDL	BDL
November-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	6 ug/L	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

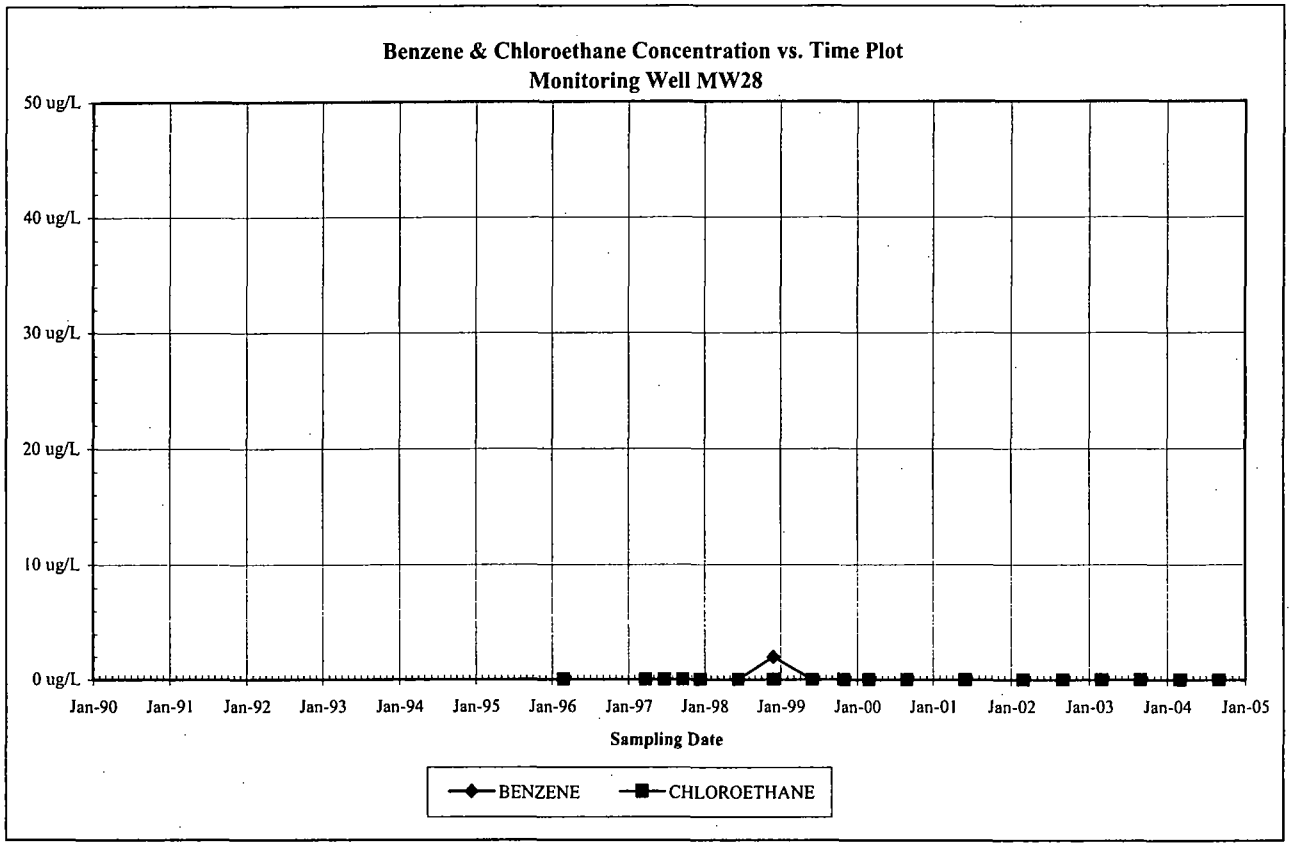
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW28

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
March-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	2 ug/L	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

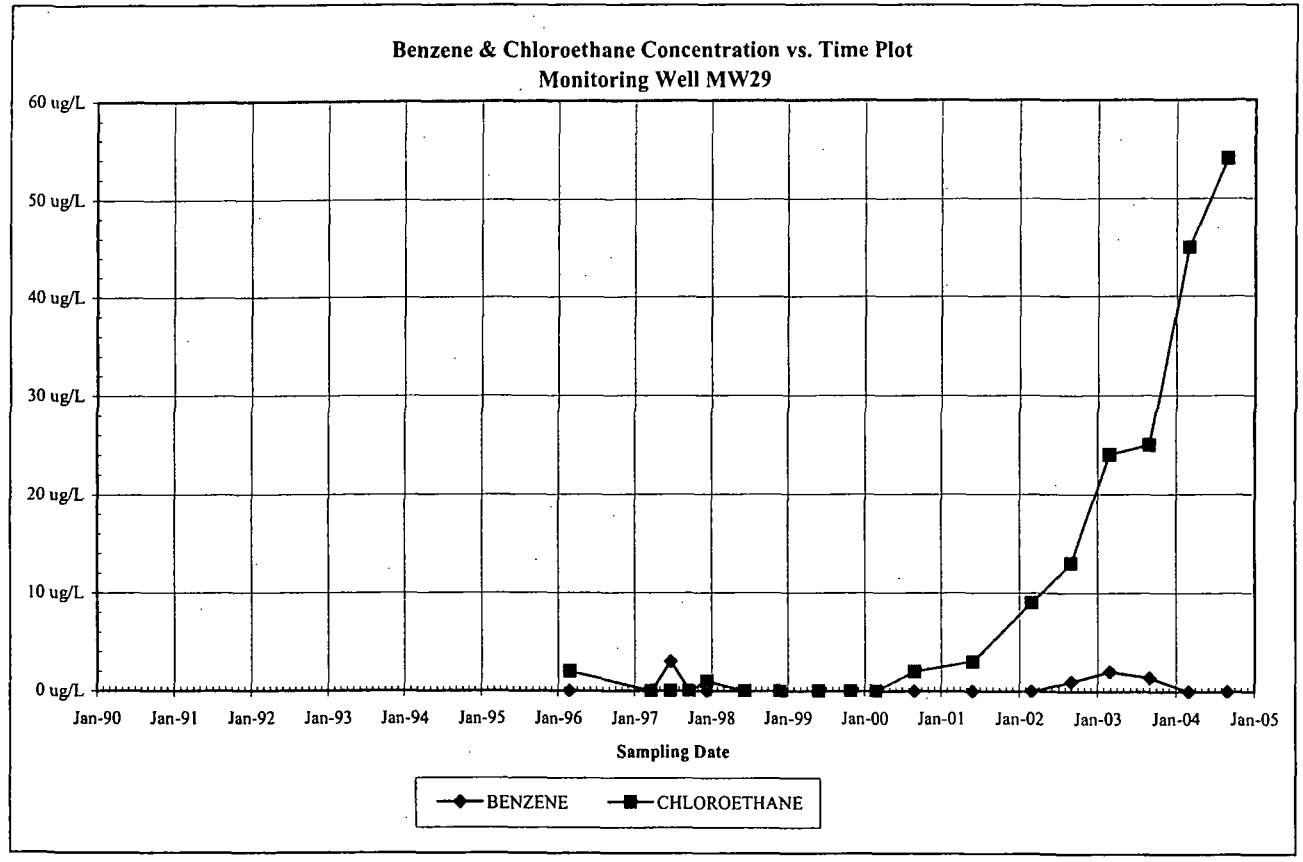
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW29

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
March-96	BDL	2 ug/L
March-97	BDL	BDL
June-97	3 ug/L	BDL
September-97	BDL	BDL
December-97	BDL	1 ug/L
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	2 ug/L
June-01	BDL	3 ug/L
March-02	BDL	9 ug/L
September-02	1 ug/L	13 ug/L
March-03	2 ug/L	24 ug/L
September-03	1.4 ug/L	25 ug/L
March-04	BDL	45 ug/L
September-04	BDL	54 ug/L

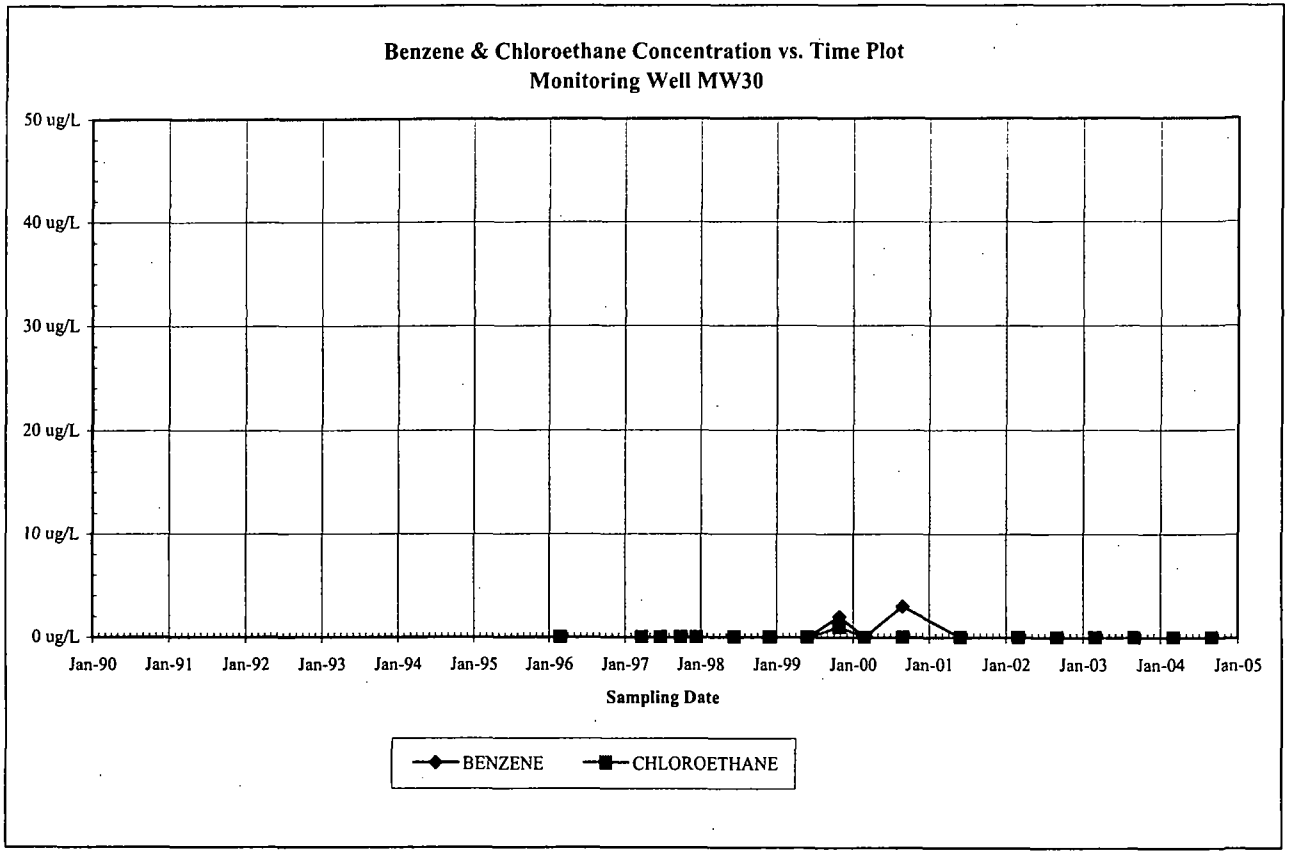
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW30

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
March-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
October-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	2 ug/L	1 ug/L
March-00	BDL	BDL
September-00	3 ug/L	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

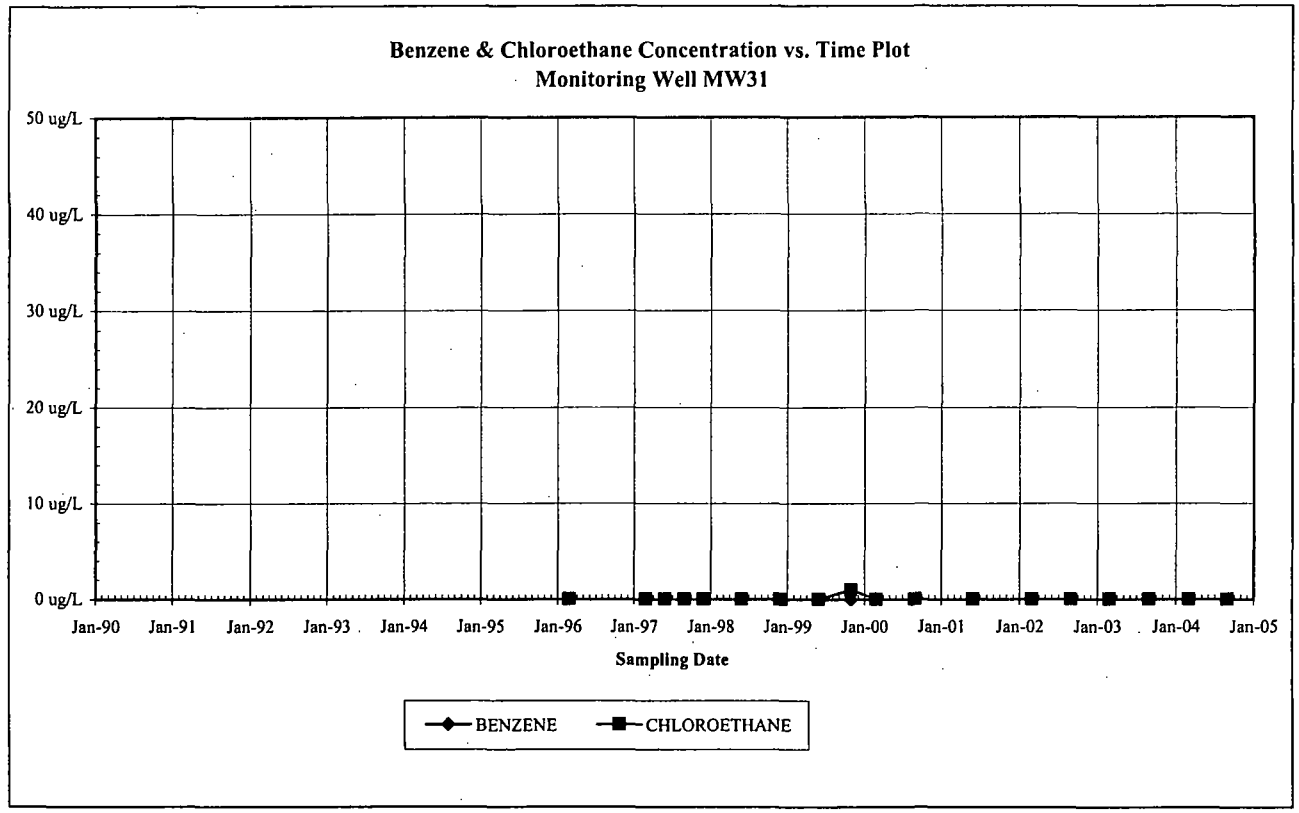
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW31

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
March-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	1 ug/L
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

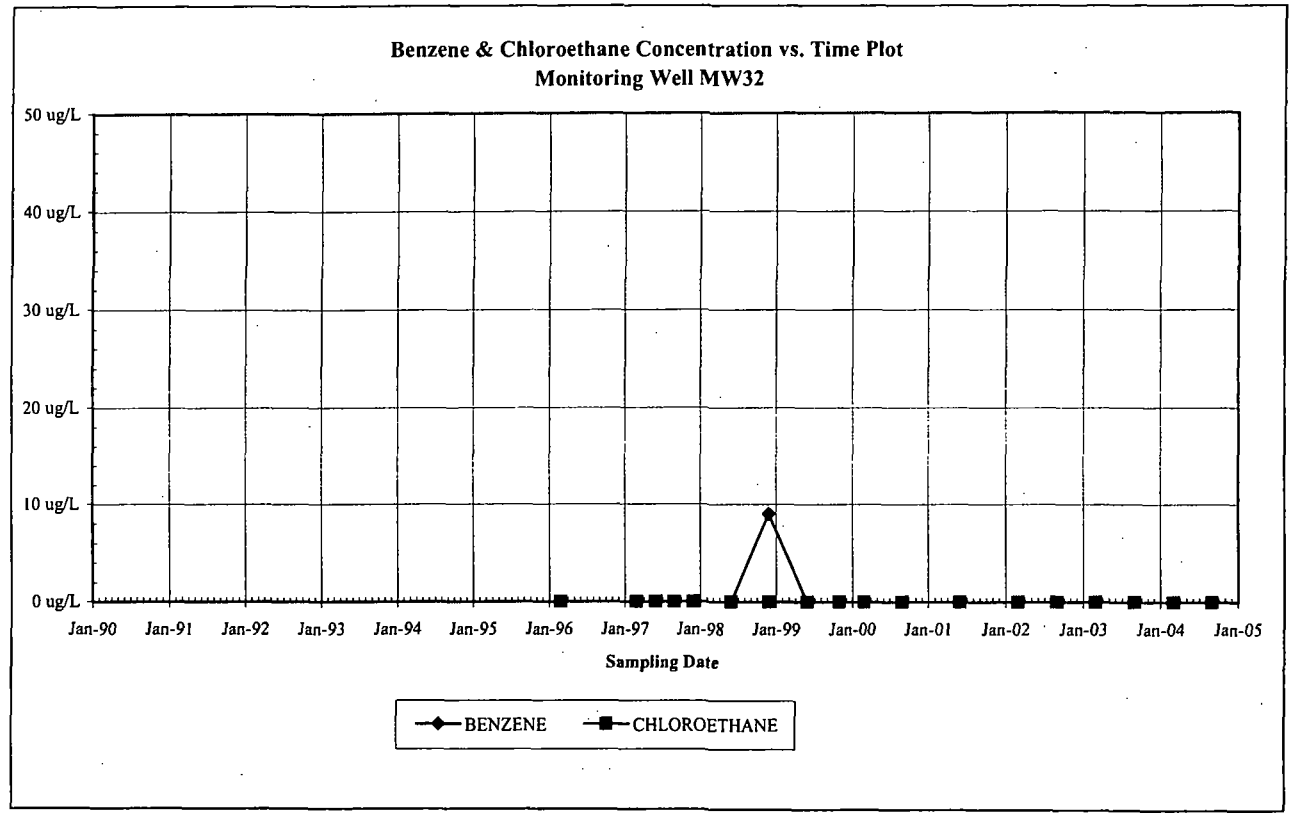
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW32

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
March-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	9 ug/L	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

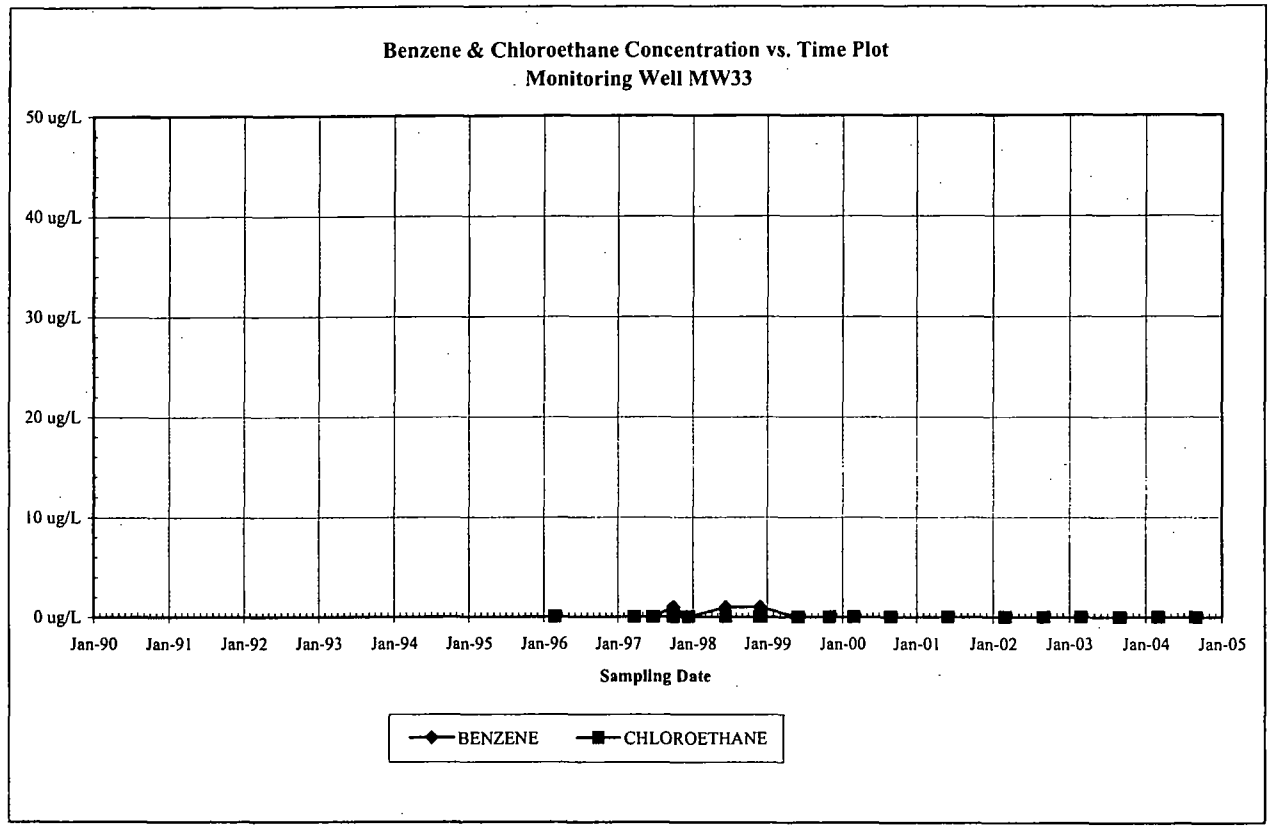
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW33

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
March-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
October-97	1 ug/L	BDL
December-97	BDL	BDL
June-98	1 ug/L	BDL
December-98	1 ug/L	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

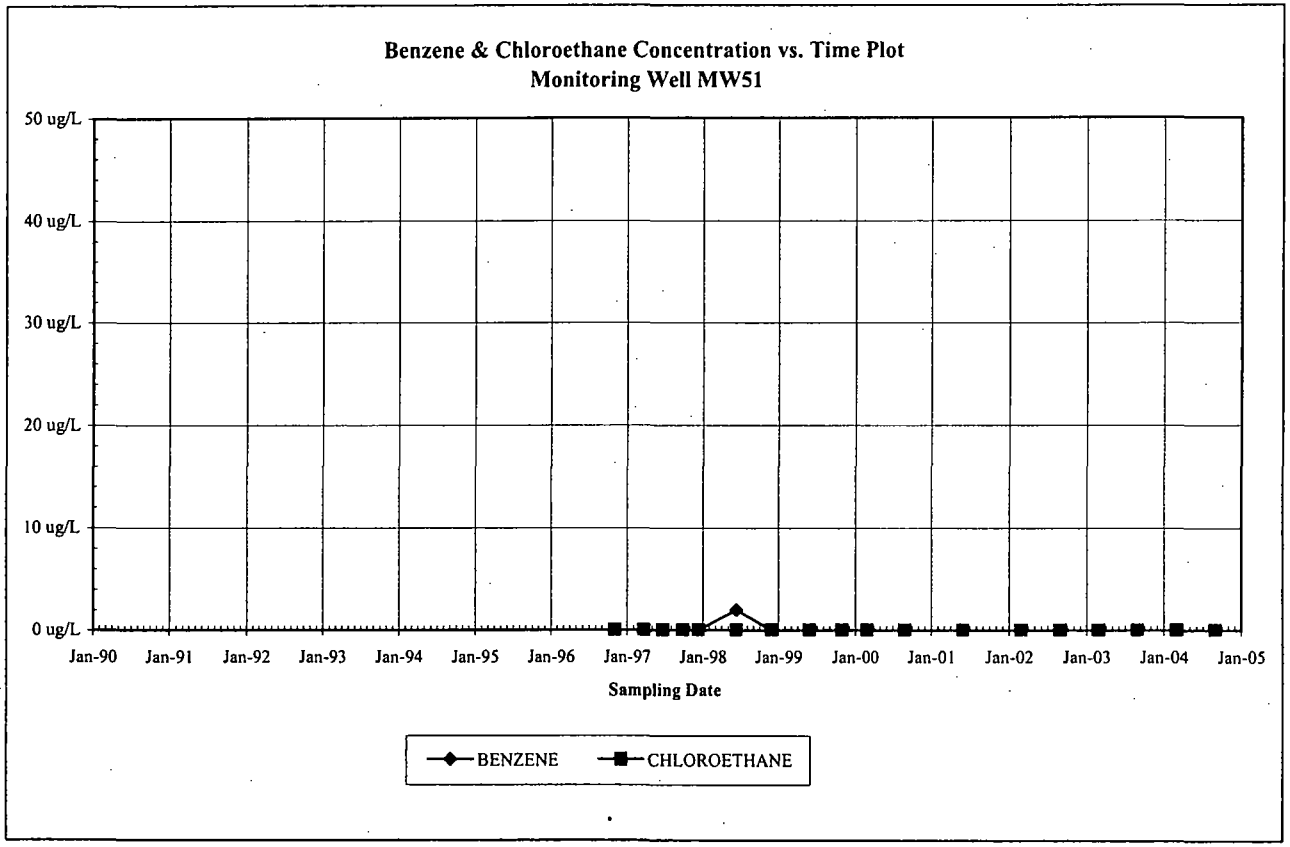
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW51

DATE	BENZENE	CHLOROETHANE
BASELINE	100	100
August-89		
May-90		
January-95		
November-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
October-97	BDL	BDL
December-97	BDL	BDL
June-98	2 ug/L	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

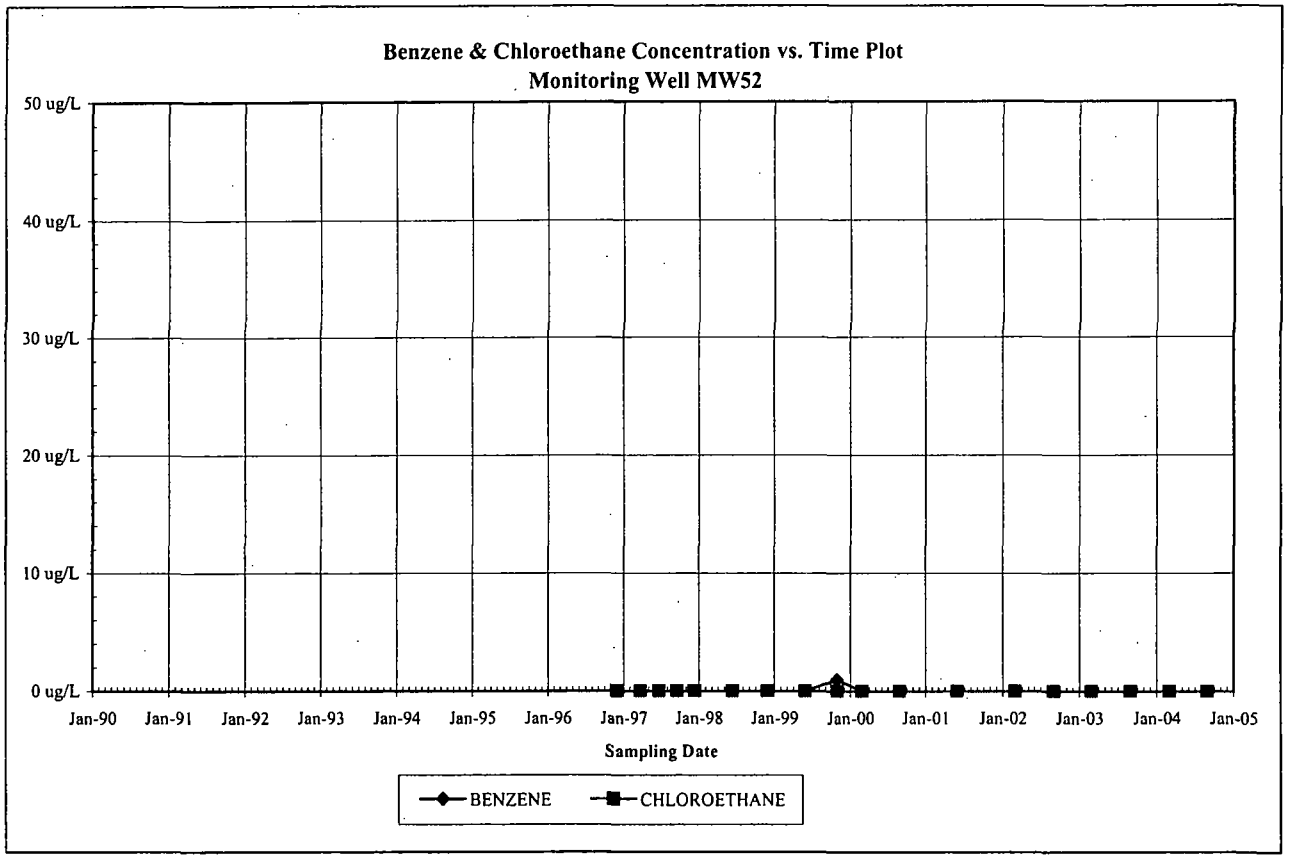
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW52

DATE	BENZENE	CHLOROETHANE
BASELINE	100	100
August-89		
May-90		
January-95		
December-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	1 ug/L	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

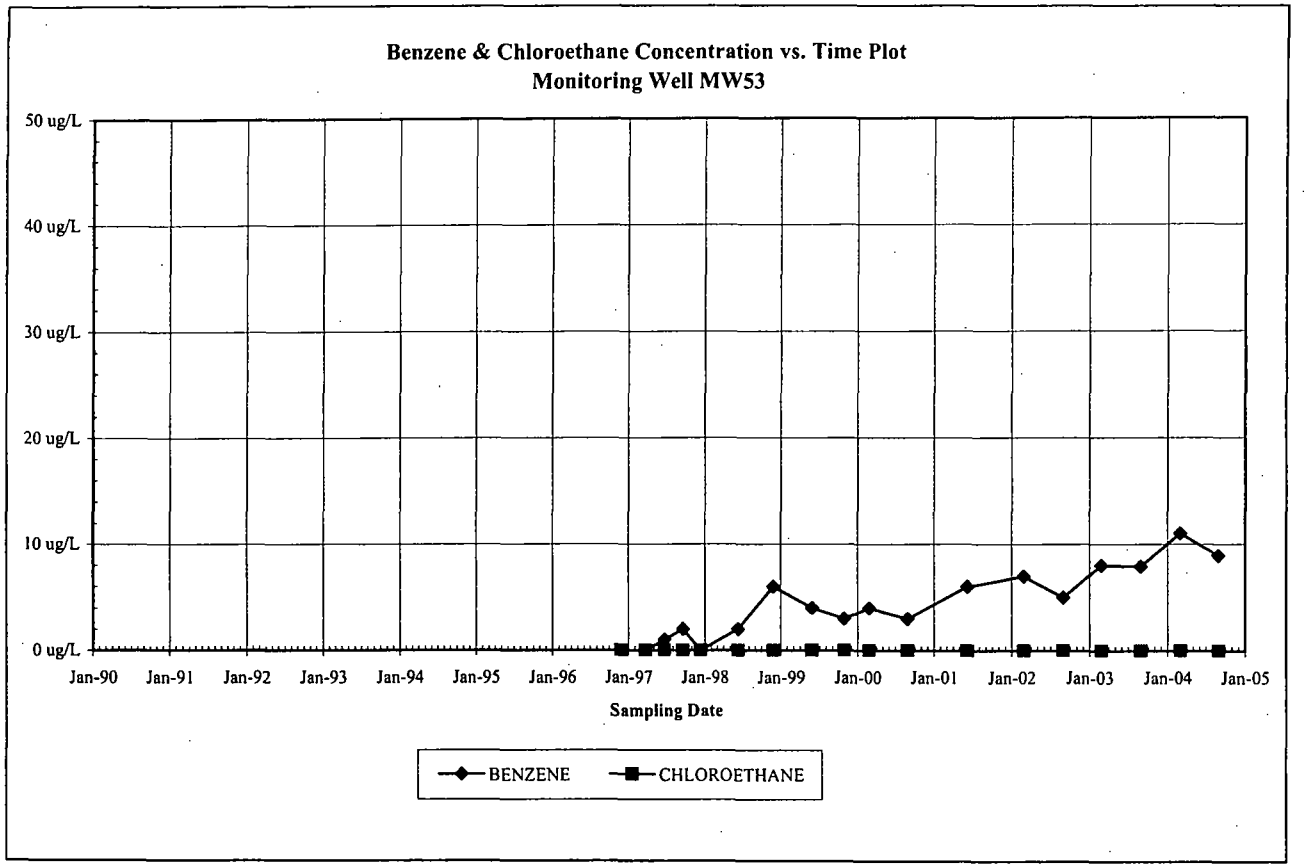
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW53

DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
December-96	BDL	BDL
March-97	BDL	BDL
June-97	1 ug/L	BDL
September-97	2 ug/L	BDL
December-97	BDL	BDL
June-98	2 ug/L	BDL
December-98	6 ug/L	BDL
June-99	4 ug/L	BDL
November-99	3 ug/L	BDL
March-00	4 ug/L	BDL
September-00	3 ug/L	BDL
June-01	6 ug/L	BDL
March-02	7 ug/L	BDL
September-02	5 ug/L	BDL
March-03	8 ug/L	BDL
September-03	7.9 ug/L	BDL
March-04	11 ug/L	BDL
September-04	8.9 ug/L	BDL

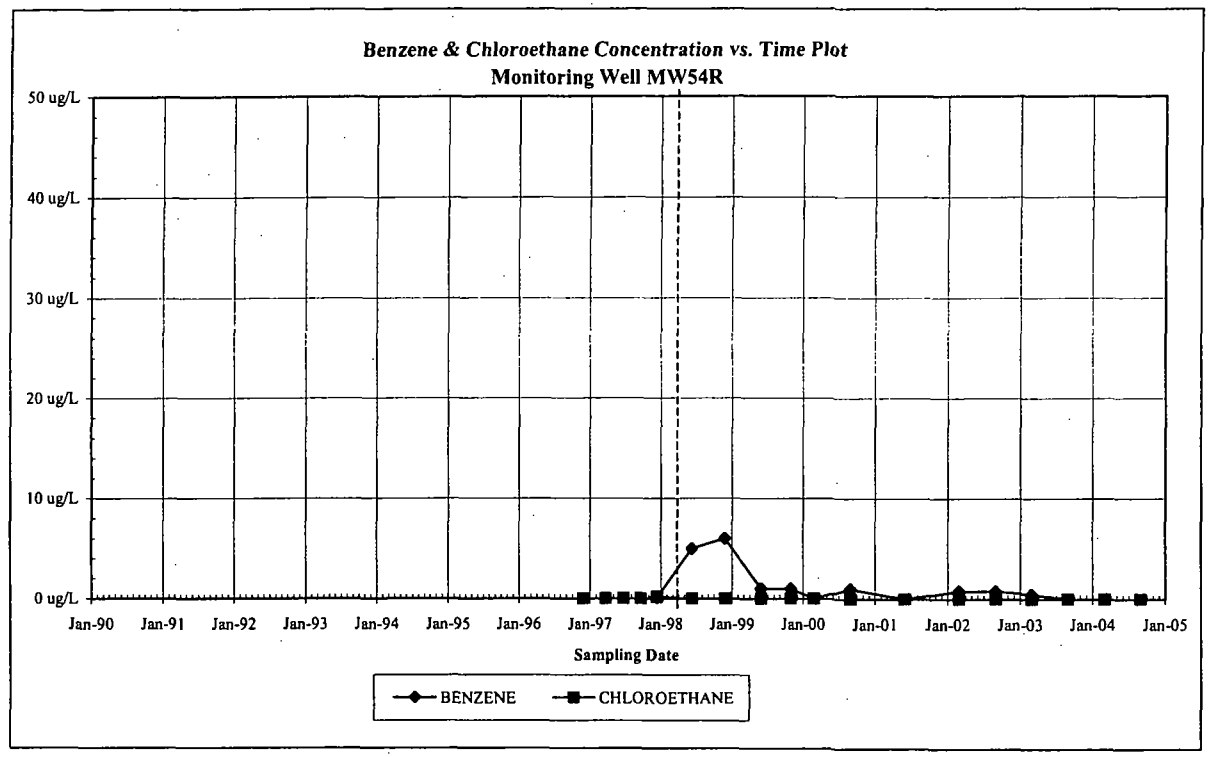
BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW54R

DATE	BENZENE	CHLOROETHANE	
BASELINE	10	10	
August-89			
May-90			
January-95			
December-96	BDL	BDL	
March-97	BDL	BDL	
June-97	BDL	BDL	
September-97	BDL	BDL	
December-97	0.1 ug/L	0.2 ug/L	
June-98	5 ug/L	BDL	<- MW54R
December-98	6 ug/L	BDL	
June-99	1 ug/L	BDL	
November-99	1 ug/L	BDL	
March-00	BDL	BDL	
September-00	1 ug/L	BDL	
June-01	BDL	BDL	
March-02	1 ug/L	BDL	
September-02	1 ug/L	BDL	
March-03	0.5 ug/L	BDL	
September-03	BDL	BDL	
March-04	BDL	BDL	
September-04	BDL	BDL	

BDL = Below the Detection Limit
MW54 was damaged by a vehicle and was replaced with MW54R

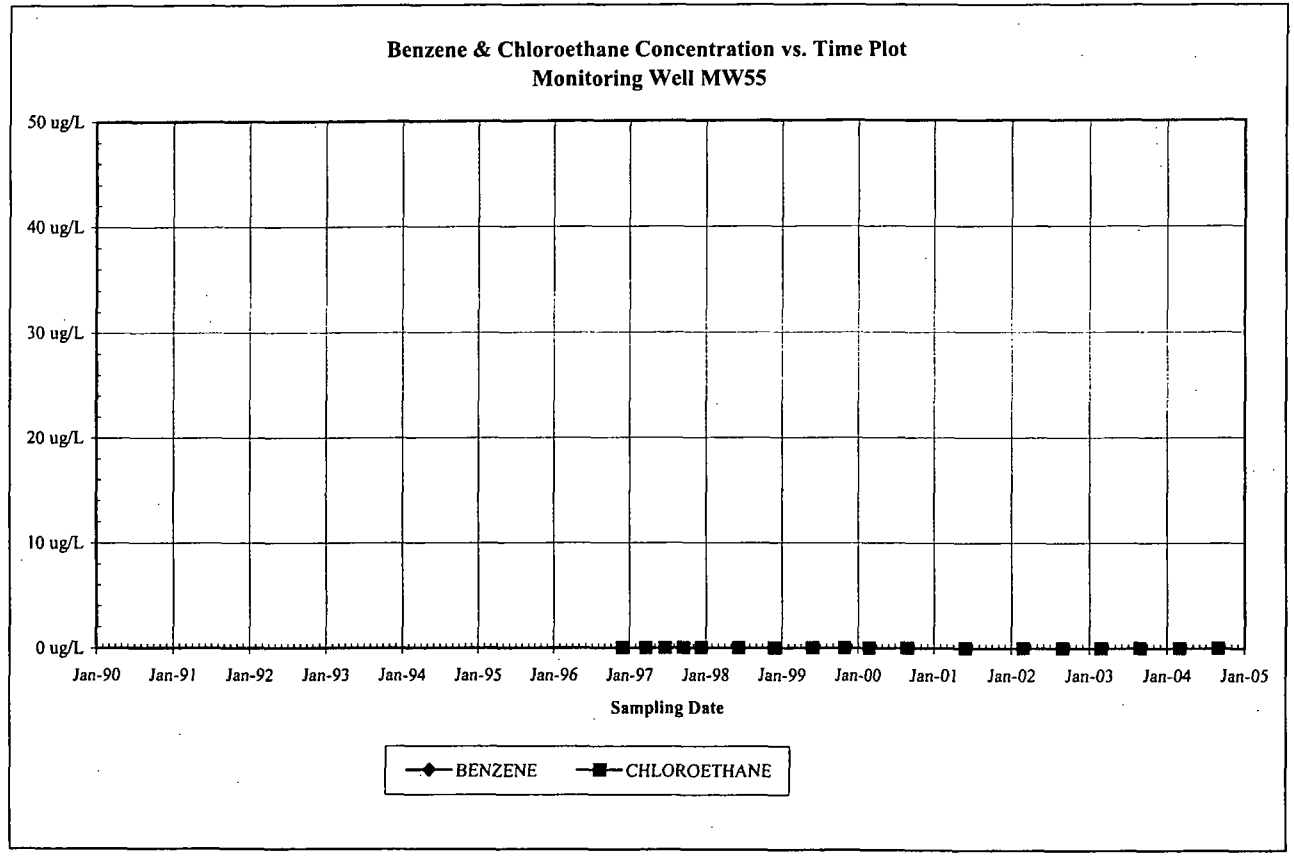


---------- Line indicates change to replacement well

Concentration vs. Time Plot for
Lower Aquifer Monitoring Well MW55

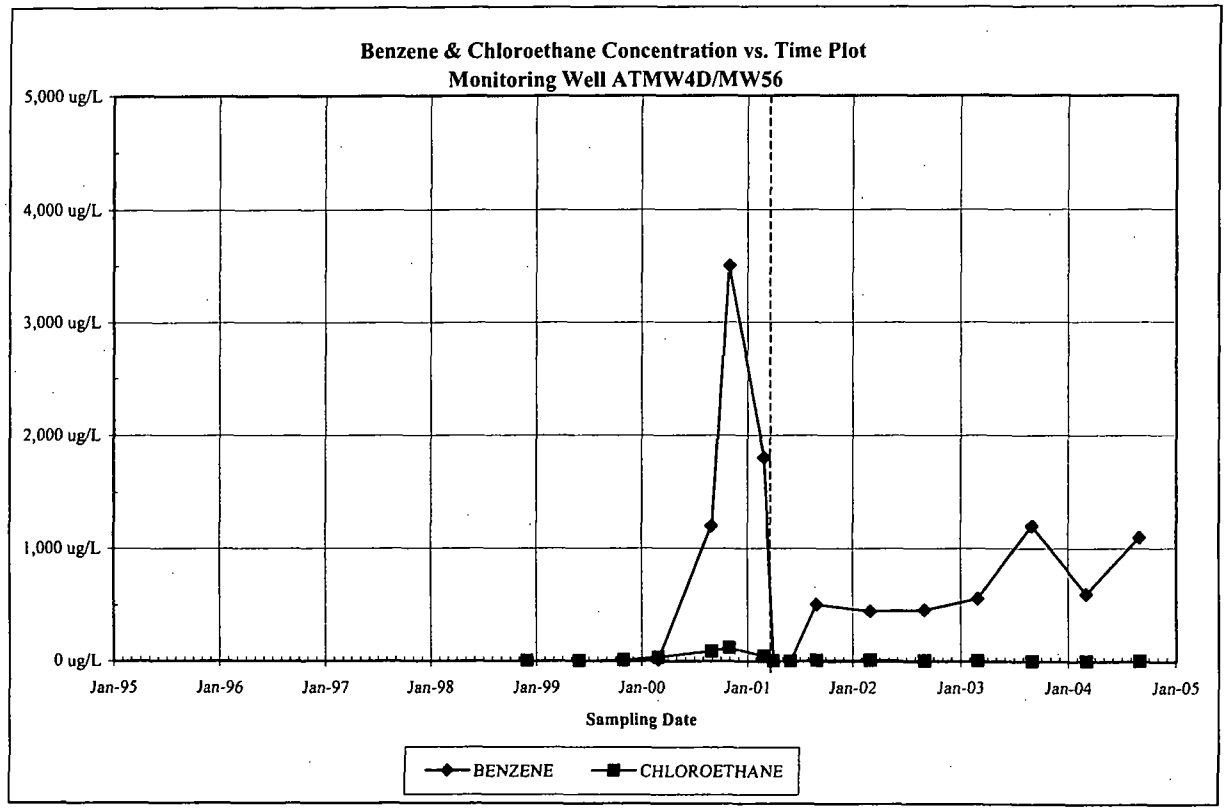
DATE	BENZENE	CHLOROETHANE
BASELINE	10	10
August-89		
May-90		
January-95		
December-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00	BDL	BDL
September-00	BDL	BDL
June-01	BDL	BDL
March-02	BDL	BDL
September-02	BDL	BDL
March-03	BDL	BDL
September-03	BDL	BDL
March-04	BDL	BDL
September-04	BDL	BDL

BDL = Below the Detection Limit



Concentration vs. Time Plot for
Lower Aquifer Monitoring Well ATMW4D-MW56

DATE	BENZENE	CHLOROETHANE	
BASELINE	-	-	
December-98	BDL	BDL	
June-99	BDL	BDL	
November-99	3 ug/L	9 ug/L	
March-00	12 ug/L	34 ug/L	
September-00	1,200 ug/L	88 ug/L	
November-00	3,500 ug/L	120 ug/L	
March-01	1,800 ug/L	42 ug/L	ATMW4D
April-01	BDL	BDL	MW56
June-01	BDL	BDL	
September-01	510 ug/L	10 ug/L	
March-02	450 ug/L	8 ug/L	
September-02	460 ug/L	6 ug/L	
March-03	560 ug/L	4 ug/L	
September-03	1,200 ug/L	BDL	
March-04	600 ug/L	BDL	
September-04	1,100 ug/L	7 ug/L	



---------- Line indicates change to replacement wel

CAS/ALC
J:209\0603 ACS\Database\Timetrnd_GWMP_LA_Electronic.xls[ATMW4D-MW56]

12/15/04

Appendix C

MWH

Appendix C
Laboratory Analytical Reports and Data Validation Narratives

Monitoring Well Results
Sample Delivery Group (SDG) 4468
Data Validation Narrative - SDG 4468

SDG 4469
Data Validation Narrative – SDG 4469

Precision, Accuracy, Representativeness, Comparability, Completeness (PARCC) Review

Residential Well Results
SDG 4517 – VOCs
Data Validation Narrative – VOCs

SDG 4517 – SVOCs
Data Validation Narrative – SVOCs

SDG 4517 – PCB/Pesticides
Data Validation Narrative – PCB/Pesticides

SDG 4517 – Inorganics
Data Validation Narrative - Metals
Data Validation Narrative – Cyanide

PARCC Review

(Note: Residential Well PW-Re is represented by the sample labeled PW-Z in the laboratory reports)

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP02-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446902

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446902B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP02-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446902

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446902B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	15	
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	1.4	J
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	2.1	J
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWDUP02-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446902

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446902B59

Level: (low/med) LOW Date Received: 09/24/04

Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.84	10	J
2. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	11.82	6.2	NJ
3.				
4.				
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30.				

FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP03-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446914

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446914B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	27	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	13	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	890	E
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP03-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446914

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446914B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWDUP03-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446914

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446914B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP03-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446914

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446914DA59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/11/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 6.7

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	33	U
74-87-3	Chloromethane	33	U
75-01-4	Vinyl Chloride	33	U
74-83-9	Bromomethane	33	U
75-00-3	Chloroethane	22	DJ
75-69-4	Trichlorofluoromethane	33	U
75-35-4	1,1-Dichloroethene	33	U
75-15-0	Carbon disulfide	33	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	33	U
67-64-1	Acetone	83	U
75-09-2	Methylene Chloride	7.2	DJ
156-60-5	trans-1,2-Dichloroethene	33	U
1634-04-4	Methyl-tert-butyl ether	33	U
75-34-3	1,1-Dichloroethane	33	U
156-59-2	cis-1,2-Dichloroethene	33	U
78-93-3	2-butanone	83	U
67-66-3	Chloroform	33	U
71-55-6	1,1,1-Trichloroethane	33	U
56-23-5	Carbon Tetrachloride	33	U
71-43-2	Benzene	910	D
107-06-2	1,2-Dichloroethane	33	U
79-01-6	Trichloroethene	33	U
78-87-5	1,2-Dichloropropane	33	U
75-27-4	Bromodichloromethane	33	U
10061-01-5	cis-1,3-Dichloropropene	33	U
108-10-1	4-Methyl-2-pentanone	83	U
108-88-3	Toluene	33	U
10061-02-6	trans-1,3-Dichloropropene	33	U
79-00-5	1,1,2-Trichloroethane	33	U
127-18-4	Tetrachloroethene	33	U
591-78-6	2-hexanone	83	U
124-48-1	Dibromochloromethane	33	U
106-93-4	1,2-Dibromoethane	33	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP03-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446914

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446914DA59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/11/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 6.7

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	33	U
100-41-4	Ethylbenzene	33	U
100-42-5	Styrene	33	U
75-25-2	Bromoform	33	U
98-82-8	Isopropyl Benzene	33	U
79-34-5	1,1,2,2-Tetrachloroethane	33	U
541-73-1	1,3-Dichlorobenzene	33	U
106-46-7	1,4-Dichlorobenzene	33	U
95-50-1	1,2-Dichlorobenzene	33	U
96-12-8	1,2-Dibromo-3-Chloropropane	33	U
120-82-1	1,2,4-Trichlorobenzene	33	U
1330-20-7	Xylene (total)	33	U
79-20-9	Methyl acetate	33	U
110-82-7	Cyclohexane	33	U
108-87-2	Methylcyclohexane	33	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWDUP03-24DL

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446914

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446914DA59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/11/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 6.7

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB02-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446903

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446903B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	0.81	J
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB02-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446903

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446903B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWEB02-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446903

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446903B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB03-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446915

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446915B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	4.7	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB03-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446915

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446915B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWEB03-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446915

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446915B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446910

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446910B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	2.5	J
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	2.7	J
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446910

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446910B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW06-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446910

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446910B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-24MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 48020

Sample wt/vol: 5 (g/ml) ML Lab File ID: 48020B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	49	
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	60	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	56	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	63	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-24MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 48020

Sample wt/vol: 5 (g/ml) ML Lab File ID: 48020B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	62	
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-24MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 48021

Sample wt/vol: 5 (g/ml) ML Lab File ID: 48021B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	45	
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	56	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	51	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	59	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW06-24MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 48021

Sample wt/vol: 5 (g/ml) ML Lab File ID: 48021B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	58	
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW09R-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446906

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446906B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	11	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	6.5	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW09R-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446906

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446906B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW10C-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446911

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446911B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	2.8	J
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW10C-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446911

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446911B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	5.83	760	NJ
2. 109-99-9	FURAN, TETRAHYDRO-	8.54	23	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW10C-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446911

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446911DB59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/06/04

GC Column: EQUITY624 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) UG/L	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	97	D
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
75-15-0	Carbon disulfide	10	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	10	U
67-64-1	Acetone	25	U
75-09-2	Methylene Chloride	2.8	DJ
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl-tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
78-93-3	2-butanone	25	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	190	D
107-06-2	1,2-Dichloroethane	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	25	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-hexanone	25	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW10C-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446911

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446911DB59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/06/04

GC Column: EQUITY624 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) UG/L	Q
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropyl Benzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-Chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
1330-20-7	Xylene (total)	10	U
79-20-9	Methyl acetate	10	U
110-82-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW10C-24DL

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446911

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446911DB59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/06/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.0

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

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	5.80	780	NJD
2. 109-99-9	FURAN, TETRAHYDRO-	8.51	24	NJD
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW14-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446905

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446905B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW14-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446905

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446905B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW14-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446905

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446905B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW15-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446901

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446901B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	1.9	J
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	0.91	J
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	7.7	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW15-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446901

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446901B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW15-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446901

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446901B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	BRANCHED ALKANE	3.50	12	J
2. 593-70-4	METHANE, CHLOROFLUORO-	4.03	7.1	NJ
3. 60-29-7	ETHER	5.84	7.3	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW19-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446908

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446908B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	27	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW19-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446908

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446908B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW19-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446908

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446908B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.50	5.9	J
2.	60-29-7	ETHER	5.84	8.7	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW29-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446907

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446907B59

Level: (low/med) LOW Date Received: 09/28/04

Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	54	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	0.84	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW29-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446907

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446907B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW29-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446907

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446907B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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2.					
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW48-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446913

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446913B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	20	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	15	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	730	E
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW48-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446913

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446913B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW48-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446913

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446913B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW48-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446913

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446913DA59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/11/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.6

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	28	U
74-87-3	Chloromethane	28	U
75-01-4	Vinyl Chloride	28	U
74-83-9	Bromomethane	28	U
75-00-3	Chloroethane	22	DJ
75-69-4	Trichlorofluoromethane	28	U
75-35-4	1,1-Dichloroethene	28	U
75-15-0	Carbon disulfide	28	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	28	U
67-64-1	Acetone	70	U
75-09-2	Methylene Chloride	5.0	DJ
156-60-5	trans-1,2-Dichloroethene	28	U
1634-04-4	Methyl-tert-butyl ether	28	U
75-34-3	1,1-Dichloroethane	28	U
156-59-2	cis-1,2-Dichloroethene	28	U
78-93-3	2-butanone	70	U
67-66-3	Chloroform	28	U
71-55-6	1,1,1-Trichloroethane	28	U
56-23-5	Carbon Tetrachloride	28	U
71-43-2	Benzene	890	D
107-06-2	1,2-Dichloroethane	28	U
79-01-6	Trichloroethene	28	U
78-87-5	1,2-Dichloropropane	28	U
75-27-4	Bromodichloromethane	28	U
10061-01-5	cis-1,3-Dichloropropene	28	U
108-10-1	4-Methyl-2-pentanone	70	U
108-88-3	Toluene	28	U
10061-02-6	trans-1,3-Dichloropropene	28	U
79-00-5	1,1,2-Trichloroethane	28	U
127-18-4	Tetrachloroethene	28	U
591-78-6	2-hexanone	70	U
124-48-1	Dibromochloromethane	28	U
106-93-4	1,2-Dibromoethane	28	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW48-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446913

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446913DA59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/11/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.6

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	28	U
100-41-4	Ethylbenzene	28	U
100-42-5	Styrene	28	U
75-25-2	Bromoform	28	U
98-82-8	Isopropyl Benzene	28	U
79-34-5	1,1,2,2-Tetrachloroethane	28	U
541-73-1	1,3-Dichlorobenzene	28	U
106-46-7	1,4-Dichlorobenzene	28	U
95-50-1	1,2-Dichlorobenzene	28	U
96-12-8	1,2-Dibromo-3-Chloropropane	28	U
120-82-1	1,2,4-Trichlorobenzene	28	U
1330-20-7	Xylene (total)	28	U
79-20-9	Methyl acetate	28	U
110-82-7	Cyclohexane	28	U
108-87-2	Methylcyclohexane	28	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW48-24DL

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446913

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446913DA59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/11/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.6

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW49-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446912

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446912B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	11	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	1.6	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	90	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW49-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446912

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446912B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW49-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446912

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446912B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW56-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446909

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446909B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	7.1	
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	1000	E
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW56-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446909

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446909B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	1.8	J
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW56-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446909

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446909B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	60-29-7	ETHER	5.83	5.8	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW56-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446909

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446909DB59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/06/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 10.0

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	50	U
74-87-3	Chloromethane	50	U
75-01-4	Vinyl Chloride	50	U
74-83-9	Bromomethane	50	U
75-00-3	Chloroethane	50	U
75-69-4	Trichlorofluoromethane	50	U
75-35-4	1,1-Dichloroethene	50	U
75-15-0	Carbon disulfide	50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	50	U
67-64-1	Acetone	130	U
75-09-2	Methylene Chloride	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
1634-04-4	Methyl-tert-butyl ether	50	U
75-34-3	1,1-Dichloroethane	50	U
156-59-2	cis-1,2-Dichloroethene	50	U
78-93-3	2-butanone	130	U
67-66-3	Chloroform	50	U
71-55-6	1,1,1-Trichloroethane	50	U
56-23-5	Carbon Tetrachloride	50	U
71-43-2	Benzene	1100	D
107-06-2	1,2-Dichloroethane	50	U
79-01-6	Trichloroethene	50	U
78-87-5	1,2-Dichloropropane	50	U
75-27-4	Bromodichloromethane	50	U
10061-01-5	cis-1,3-Dichloropropene	50	U
108-10-1	4-Methyl-2-pentanone	130	U
108-88-3	Toluene	50	U
10061-02-6	trans-1,3-Dichloropropene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
127-18-4	Tetrachloroethene	50	U
591-78-6	2-hexanone	130	U
124-48-1	Dibromochloromethane	50	U
106-93-4	1,2-Dibromoethane	50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW56-24DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446909

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446909DB59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/06/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 10.0

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	50	U
100-41-4	Ethylbenzene	50	U
100-42-5	Styrene	50	U
75-25-2	Bromoform	50	U
98-82-8	Isopropyl Benzene	50	U
79-34-5	1,1,2,2-Tetrachloroethane	50	U
541-73-1	1,3-Dichlorobenzene	50	U
106-46-7	1,4-Dichlorobenzene	50	U
95-50-1	1,2-Dichlorobenzene	50	U
96-12-8	1,2-Dibromo-3-Chloropropane	50	U
120-82-1	1,2,4-Trichlorobenzene	50	U
1330-20-7	Xylene (total)	50	U
79-20-9	Methyl acetate	50	U
110-82-7	Cyclohexane	50	U
108-87-2	Methylcyclohexane	50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW56-24DL

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446909

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446909DB59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/06/04

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 10.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWTB01-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446904

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446904B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWTB01-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446904

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446904B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWTB01-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446904

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446904B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWTB02-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446916

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446916B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	3.1	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	0.78	J
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWTB02-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446916

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446916B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWTB02-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4469

Matrix: (soil/water) WATER Lab Sample ID: 446916

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446916B59

Level: (low/med) LOW Date Received: 09/28/04

% Moisture: not dec. _____ Date Analyzed: 10/07/04

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

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.44	6.2	J
2.					
3.					
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FORM I VOA-TIC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 23 through September 27, 2004

LDC Report Date: November 15, 2004

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level III & IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4469

Sample Identification

ACSGWMW15-24	ACSGWMW06-24MS
ACSGWDUP02-24	ACSGWMW06-24MSD
ACSGWEB02-24	
ACSGWTB01-24	
ACSGWMW14-24	
ACSGWMW09R-24	
ACSGWMW29-24	
ACSGWMW19-24	
ACSGWMW56-24	
ACSGWMW56-24DL	
ACSGWMW06-24	
ACSGWMW10C-24	
ACSGWMW10C-24DL	
ACSGWMW49-24	
ACSGWMW48-24	
ACSGWMW48-24DL	
ACSGWDUP03-24	
ACSGWDUP03-24DL	
ACSGWEB03-24	
ACSGWTB02-24	

Introduction

This data review covers 22 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

The review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all system performance check compounds (SPCCs) were within method criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/1/04	Tetrachloroethene 1,2,4-Trichlorobenzene Methylcyclohexane	35.40 28.10 27.24	ACSGWMW15-24 ACSGWDUP02-24 ACSGWEB02-24 ACSGWTB01-24 ACSGWMW14-24 ACSGWMW09R-24 ACSGWMW29-24 ACSGWMW19-24 ACSGWMW56-24 ACSGWMW06-24 ACSGWMW10C-24 VBLKTS	J (all detects) UJ (all non-detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
10/6/04	Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone Methyl acetate	36.63 31.81 29.12 37.08 30.26	ACSGWMW56-24DL ACSGWMW10C-24DL ACSGWMW49-24 ACSGWMW48-24DL ACSGWDUP03-24DL ACSGWEB03-24 ACSGWTB02-24 ACSGWMW06-24MS ACSGWMW06-24MSD VBLKUD	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values for all system performance check compounds (SPCCs) were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
VBLKBT	10/11/04	2-Butanone	8.7 ug/L	ACSGWMW48-24 ACSGWDUP03-24

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

Samples ACSGWTB01-24 and ACSGWTB02-24 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
ACSGWTB02-24	9/27/04	Carbon disulfide Toluene	3.1 ug/L 0.78 ug/L	ACSGWMW14-24 ACSGWMW09R-24 ACSGWMW29-24 ACSGWMW19-24 ACSGWMW56-24 ACSGWMW56-24DL ACSGWMW06-24 ACSGWMW10C-24 ACSGWMW10C-24DL ACSGWMW49-24 ACSGWMW48-24 ACSGWMW48-24DL ACSGWDUP03-24 ACSGWDUP03-24DL ACSGWEB03-24

Samples ACSGWEB02-24 and ACSGWEB03-24 were identified as equipment blanks. No volatile contaminants were found in these blanks with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
ACSGWEB02-24	9/23/04	Toluene	0.81 ug/L	ACSGWMW14-24 ACSGWMW15-24 ACSGWDUP02-24
ACSGWEB03-24	9/27/04	Carbon disulfide	4.7 ug/L	ACSGWMW09R-24 ACSGWMW29-24 ACSGWMW19-24 ACSGWMW56-24 ACSGWMW56-24DL ACSGWMW06-24 ACSGWMW10C-24 ACSGWMW10C-24DL ACSGWMW49-24 ACSGWMW48-24 ACSGWMW48-24DL ACSGWDUP03-24 ACSGWDUP03-24DL

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ACSGWEB03-24	Carbon disulfide	4.7 ug/L	5.0UB ug/L
ACSGWMW49-24	Carbon disulfide	13 ug/L	13UB ug/L
ACSGWMW48-24	Carbon disulfide	15 ug/L	15UB ug/L
ACSGWDUP03-24	Carbon disulfide	1.6 ug/L	5.0UB ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
VBLKTS	1,2-Dichloroethane-d4	79 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
VBLKBT	1,2-Dichloroethane-d4	79 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
ACSGWMW56-24 ACSGWMW10C-24 ACSGWMW48-24 ACSGWDUP03-24	Benzene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples ACSGWMW45-24** (from SDG 4468) and ACSGWDUP02-24, samples ACSGWMW48-24 and ACSGWDUP03-24, and samples ACSGWMW48-24DL and ACSGWDUP03-24DL were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	ACSGWDUP02-24	ACSGWMW45-24**	
Chlorobenzene	15	15	0
1,2-Dichlorobenzene	1.4	1.5	7
Cyclohexane	5.0	2.1	82
Methylcyclohexane	5.0U	1.2	200

Compound	Concentration (ug/L)		RPD
	ACSGWMW48-24	ACSGWDUP03-24	
Chloroethane	20	27	30
Carbon disulfide	15	13	14
Benzene	730	890	20

Compound	Concentration (ug/L)		RPD
	ACSGWMW48-24DL	ACSGWDUP03-24DL	
Chloroethane	22	22	0
Methylene chloride	5.0	7.2	36
Benzene	890	910	2

ACS-89
Volatiles - Data Qualification Summary - SDG 4469

SDG	Sample	Compound	Flag	A or P	Reason
4469	ACSGWMW15-24 ACSGWDUP02-24 ACSGWEB02-24 ACSGWTB01-24 ACSGWMW14-24 ACSGWMW09R-24 ACSGWMW29-24 ACSGWMW19-24 ACSGWMW56-24 ACSGWMW06-24 ACSGWMW10C-24	Tetrachloroethene 1,2,4-Trichlorobenzene Methylcyclohexane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
4469	ACSGWMW56-24DL ACSGWMW10C-24DL ACSGWMW49-24 ACSGWMW48-24DL ACSGWDUP03-24DL ACSGWEB03-24 ACSGWTB02-24	Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone Methyl acetate	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
4469	ACSGWMW56-24 ACSGWMW10C-24 ACSGWMW48-24 ACSGWDUP03-24	Benzene	J (all detects)	A	Compound quantitation and CRQLs

ACS-89
Volatiles - Laboratory Blank Data Qualification Summary - SDG 4469

No Sample Data Qualified in this SDG

ACS-89
Volatiles - Field Blank Data Qualification Summary - SDG 4469

SDG	Sample	Compound	Modified Final Concentration	A or P
4469	ACSGWEB03-24	Carbon disulfide	5.0UB ug/L	A
4469	ACSGWMW49-24	Carbon disulfide	13UB ug/L	A
4469	ACSGWMW48-24	Carbon disulfide	15UB ug/L	A
4469	ACSGWDUP03-24	Carbon disulfide	5.0UB ug/L	A

LDC #: 12711B1
SDG #: 4469
Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 11/11/04
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/23 → 9/27/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD, $r^2 \geq 0.990$ SPCC RRF only
IV.	Continuing calibration	SW	
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	SW	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	SDG# 4468
XVI.	Field duplicates	SW	D=2 & ACSGWMW45-24 D=15,17 D=16,18
XVII.	Field blanks	SW	EB=3, 19 TB=4, 20

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	2	ACSGWMW15-24	-	11	2	ACSGWMW06-24	-	21	3	ACSGWMW06-24MS	31	1	VBLKBT 10/11/04
2	2	ACSGWDUP02-24	-	12	2	ACSGWMW10C-24	-	22	3	ACSGWMW06-24MSD	32	2	VBLKTS 10/1/04
3	2	ACSGWEB02-24	+	13	3	ACSGWMW10C-24DL	-	23			33	3	VBLKUD 10/6/04
4	2	ACSGWTB01-24		14	3	ACSGWMW49-24	-	24			34		
5	2	ACSGWMW14-24	-	15	1	ACSGWMW48-24 D	-	25			35		
6	2	ACSGWMW09R-24	-	16	3	ACSGWMW48-24DL D1	-	26			36		
7	2	ACSGWMW29-24	-	17	1	ACSGWDUP03-24 D	-	27			37		
8	2	ACSGWMW19-24	-	18	3	ACSGWDUP03-24DL D1	-	28			38		
9	2	ACSGWMW56-24	-	19	3	ACSGWEB03-24	-	29			39		
10	3	ACSGWMW56-24DL	-	20	3	ACSGWTB02-24		30			40		

1,2,3,4 - 9/23/04
11 → 20 - 9/27/04
5 → 10 - 9/24/04

TB01 - 1 → 3
TB02 - 5 → 19

12711B1W.wpd

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl choride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: [redacted]
SDG #: 4469

[redacted]VALIDATION FINDINGS WORKSH[redacted]
Continuing Calibration

[redacted]: [redacted]
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	10/1/04	GS041001B59-CCV	AA	35.4		VBLKTS,	J/UJ/A
			KKK	28.10		1→9, 11, 12	
			Methylcyclohexane	27.24			
	10/6/04	GS041006B59-CCV	F	36.63		VBLKUD,	J/UJ/A
			M	31.81		10, 13, 14, 16	
			Y	29.12		18→22	
			Z	37.08			
			Methyl Acetate	30.26			

CONCAL1S

LDC #: 12711B1
SDG #: 4469

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 10/11/04
Conc. units: ng/L
Associated Samples: 16, 17 (ND)

Compound	Blank ID	Sample Identification								
	VBLKBT									
Methylene chloride M	8.7									
Acetone										
CRQL										

Blank analysis date:
Conc. units:
Associated Samples:

Compound	Blank ID	Sample Identification								
Methylene chloride										
Acetone										
CRQL										

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 12[redacted]
SDG #: 4469

VA[redacted]ATI[redacted]FIN[redacted]GS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L Associated sample units: ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other:_____ Associated Samples: MAS 5-19

Compound	Blank ID 20	Blank ID___	Sample Identification							
Sampling Date	9/27/04		3	19	17	15	14			
~~Methylene chloride~~ G	3.1		–	4.7/5.0UB	13/UB	15/UB	1.6/5.0UB			
Acetone CC	0.78		0.81/5.0UB	–	–	–	–			
Chloroform										
CRQL										

Blank units:_____ Associated sample units:_____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other:_____ Associated Samples:_____

Compound	Blank ID___	Blank ID___	Sample Identification							
Sampling Date										
Methylene chloride										
Acetone										
Chloroform										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

FBLKASC2.1SB

LDC #: 12711B1
SDG #: 4469

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L Associated sample units: ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: 5, 1, 2 (ND)

Compound	Blank ID 3	Blank ID ___	Sample Identification							
Sampling Date	9/23/04									
~~Methylene chloride~~ CC	0.81									
Acetone										
~~Chloroform~~										
CRQL										

Blank units: ug/L Associated sample units: ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: 6 → 18

Compound	Blank ID 19	Blank ID ___	Sample Identification							
Sampling Date	9/27/04		17	15	14					
~~Methylene chloride~~ G	4.7		13/UB	15/UB	1.6/5.0UB					
Acetone										
~~Chloroform~~										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

SDG #: 4469

Surrogate Spikes

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A	Were all surrogate %R within QC limits?
Y N N/A	If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		VBLKTS	DCE	79 (80-120)	J/UJ/P
				( )	
				( )	
		VBLKBT	↓	79 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	86-118

LDC #: 12711B1
SDG #: 4469

VALIDATION FINDINGS WORKSHEET
Compound Quantitation and CRQLs

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Y N N/A Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		9, 12, 15, 17	V exceeded cal range		J detect/A

Comments: See sample calculation verification worksheet for recalculations

LDC #: 12711B1
SDG #: 4469

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L) 2	ACSGWMW45-24	RPD
DD	15	15	0
JJJ	1.4	1.5	7
~~tycht~~ Cyclohexane	5.0	2.1	82
Methylcyclohexane	5.0u	1.2	200

Compound	Concentration (ug/L) 15	17	RPD
D	20	27	30
G	15	~~16~~ 13	14
V	730	890	20

Compound	Concentration (ug/L) 16	18	RPD
D	22	22	0
E	5.0	7.2	36
V	890	910	2

Compound	Concentration ( )		RPD

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP01-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446808

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446808B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	66	
75-09-2	Methylene Chloride	1.7	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	6.4	J
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	1.6	J
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWDUP01-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446808

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446808B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	1.8	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	6.3	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	2.8	J
95-50-1	1,2-Dichlorobenzene	4.4	J
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	2.2	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWDUP01-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446808

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446808B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 135-01-3	BENZENE, 1,2-DIETHYL-	14.61	73	NJ
2. 527-84-4	BENZENE, 1-METHYL-2-(1-METHY	14.94	66	NJ
3. 934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	15.04	86	NJ
4. 27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	15.22	36	NJ
5. 527-53-7	BENZENE, 1,2,3,5-TETRAMETHYL	15.44	140	NJ
6. 95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	15.49	240	NJ
7. 2039-89-6	BENZENE, 2-ETHENYL-1,4-DIMET	15.81	48	NJ
8. 934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	15.94	72	NJ
9. 824-22-6	1H-INDENE, 2,3-DIHYDRO-4-MET	15.99	97	NJ
10.	SUBSTITUTED BENZENE	16.27	45	J
11.				
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB01-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446809

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446809B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.5	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWEB01-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446809

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446809B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWEB01-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446809

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446809B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW08-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446803

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446803B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.5	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW08-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446803

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446803B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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
108-90-7	Chlorobenzene	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW08-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446803

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446803B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW11-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446801

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446801B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.6	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW11-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446801

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446801B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW11-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446801

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446801B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW17-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446807

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446807B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	68	
75-09-2	Methylene Chloride	1.8	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	1.6	J
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW17-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446807

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446807B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	1.7	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	6.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	2.6	J
95-50-1	1,2-Dichlorobenzene	4.2	J
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	1.9	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW17-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446807

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446807B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 141-93-5	BENZENE, 1,3-DIETHYL-	14.61	72	NJ
2. 141-93-5	BENZENE, 1,3-DIETHYL-	14.69	56	NJ
3. 535-77-3	BENZENE, 1-METHYL-3-(1-METHY	14.94	64	NJ
4.	SUBSTITUTED BENZENE	14.96	38	J
5. 934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	15.04	86	NJ
6. 874-41-9	BENZENE, 1-ETHYL-2,4-DIMETHY	15.44	140	NJ
7. 527-53-7	BENZENE, 1,2,3,5-TETRAMETHYL	15.49	250	NJ
8. 2039-89-6	BENZENE, 2-ETHENYL-1,4-DIMET	15.81	49	NJ
9. 874-41-9	BENZENE, 1-ETHYL-2,4-DIMETHY	15.94	73	NJ
10. 27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	15.99	90	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW17-24MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 47518

Sample wt/vol: 5 (g/ml) ML Lab File ID: 47518B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/01/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	43	
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	37	
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	47	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	53	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	50	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	3.6	J
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW17-24MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 47518

Sample wt/vol: 5 (g/ml) ML Lab File ID: 47518B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/01/04

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	51	
100-41-4	Ethylbenzene	1.9	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	7.1	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	3.0	J
95-50-1	1,2-Dichlorobenzene	4.6	J
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	1.7	J
1330-20-7	Xylene (total)	1.5	J
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW17-24MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 47519

Sample wt/vol: 5 (g/ml) ML Lab File ID: 47519B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	49	
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	42	
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	5.2	J
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	53	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	60	
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	57	
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	4.0	J
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW17-24MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 47519

Sample wt/vol: 5 (g/ml) ML Lab File ID: 47519B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	58	
100-41-4	Ethylbenzene	2.1	J
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	7.8	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	2.9	J
95-50-1	1,2-Dichlorobenzene	4.5	J
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	1.6	J
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW23-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446802

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446802B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.7	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW23-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446802

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446802B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW23-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446802

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446802B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	60-29-7	ETHER	5.86	8.9	NJ
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW28-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446806

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446806B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.6	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW28-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446806

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446806B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW28-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446806

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446806B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW30-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446813

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446813B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.7	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	1.1	J
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW30-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446813

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446813B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW30-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446813

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446813B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW31-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446805

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446805B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.6	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW31-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446805

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446805B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW31-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446805

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446805B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW32-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446804

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446804B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.6	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW32-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446804

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446804B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW32-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446804

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446804B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW33-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446814

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446814B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW33-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446814

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446814B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW33-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446814

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446814B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 109-87-5	METHANE, DIMETHOXY-	6.25	14	NJ
2.	UNKNOWN	6.88	5.6	J
3. 646-06-0	1,3-DIOXOLANE	8.34	5.5	NJ
4. 109-99-9	FURAN, TETRAHYDRO-	8.53	91	NJ
5. 123-91-1	1,4-DIOXANE	9.97	10	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW42-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446817

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446817B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW42-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446817

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446817B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW42-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446817

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446817B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.84	6.4	J
2.				
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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW43-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446818

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446818B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW43-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446818

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446818B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW43-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446818

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446818B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW44-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446819

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446819B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW44-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446819

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446819B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW44-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446819

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446819B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW45-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446820

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446820B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW45-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446820

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446820B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	15	
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	1.5	J
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	2.1	J
108-87-2	Methylcyclohexane	1.2	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW45-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446820

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446820B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	11.82	6.6	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW51-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446812

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446812B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.7	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW51-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446812

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446812B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW51-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446812

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446812B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	5.85	1500	NJ
2.	UNKNOWN	6.90	10	J
3. 109-99-9	FURAN, TETRAHYDRO-	8.57	6.5	NJ
4. 123-91-1	1,4-DIOXANE	9.99	8.6	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW52-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446816

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446816B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW52-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446816

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446816B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW52-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446816

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446816B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	60-29-7	ETHER	5.82	2100	NJ
2.		UNKNOWN	6.87	10	J
3.	109-99-9	FURAN, TETRAHYDRO-	8.54	17	NJ
4.					
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW53-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446815

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446815B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	8.9	
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	1.5	J
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW53-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446815

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446815B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW53-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446815

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446815B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 10/02/04

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

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

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	BRANCHED ALKANE	6.25	16	J
2.	UNKNOWN	6.88	13	J
3. 646-06-0	1,3-DIOXOLANE	8.33	7.3	NJ
4. 109-99-9	FURAN, TETRAHYDRO-	8.54	18	NJ
5. 123-91-1	1,4-DIOXANE	9.97	18	NJ
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW54R-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446811

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446811B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	9.0	J
75-09-2	Methylene Chloride	1.6	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW54R-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446811

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446811B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW54R-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446811

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446811B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW55-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446810

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446810B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
74-87-3	Chloromethane	5.0	U
75-01-4	Vinyl Chloride	5.0	U
74-83-9	Bromomethane	5.0	U
75-00-3	Chloroethane	5.0	U
75-69-4	Trichlorofluoromethane	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-15-0	Carbon disulfide	5.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	U
67-64-1	Acetone	13	U
75-09-2	Methylene Chloride	1.6	J
156-60-5	trans-1,2-Dichloroethene	5.0	U
1634-04-4	Methyl-tert-butyl ether	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-59-2	cis-1,2-Dichloroethene	5.0	U
78-93-3	2-butanone	13	U
67-66-3	Chloroform	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U
71-43-2	Benzene	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
79-01-6	Trichloroethene	5.0	U
78-87-5	1,2-Dichloropropane	5.0	U
75-27-4	Bromodichloromethane	5.0	U
10061-01-5	cis-1,3-Dichloropropene	5.0	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	5.0	U
10061-02-6	trans-1,3-Dichloropropene	5.0	U
79-00-5	1,1,2-Trichloroethane	5.0	U
127-18-4	Tetrachloroethene	5.0	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	5.0	U
106-93-4	1,2-Dibromoethane	5.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWMW55-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446810

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446810B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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	5.0	U
100-41-4	Ethylbenzene	5.0	U
100-42-5	Styrene	5.0	U
75-25-2	Bromoform	5.0	U
98-82-8	Isopropyl Benzene	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	U
120-82-1	1,2,4-Trichlorobenzene	5.0	U
1330-20-7	Xylene (total)	5.0	U
79-20-9	Methyl acetate	5.0	U
110-82-7	Cyclohexane	5.0	U
108-87-2	Methylcyclohexane	5.0	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWMW55-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4468

Matrix: (soil/water) WATER Lab Sample ID: 446810

Sample wt/vol: 5 (g/ml) ML Lab File ID: 446810B59

Level: (low/med) LOW Date Received: 09/24/04

% Moisture: not dec. _____ Date Analyzed: 09/29/04

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

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-TIC

Revision 1

LDC Report# 12711A1

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 21 through September 23, 2004

LDC Report Date: December 10, 2004

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level III & IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4468

Sample Identification

ACSGWMW11-24	ACSGWMW17-24MS
ACSGWMW23-24	ACSGWMW17-24MSD
ACSGWMW08-24	
ACSGWMW32-24	
ACSGWMW31-24**	
ACSGWMW28-24	
ACSGWMW17-24	
ACSGWDUP01-24	
ACSGWEB01-24	
ACSGWMW55-24**	
ACSGWMW54R-24	
ACSGWMW51-24	
ACSGWMW30-24	
ACSGWMW33-24	
ACSGWMW53-24**	
ACSGWMW52-24	
ACSGWMW42-24	
ACSGWMW43-24	
ACSGWMW44-24	
ACSGWMW45-24**	

**Indicates sample underwent EPA Level IV review.

Introduction

This data review covers 22 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

The review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a EPA Level IV review. A EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

Average relative response factors (RRF) for all system performance check compounds (SPCCs) were within method criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/1/04	Tetrachloroethene 1,2,4-Trichlorobenzene Methylcyclohexane	35.40 28.10 27.24	ACSGWMW33-24 ACSGWMW53-24** ACSGWMW52-24 ACSGWMW42-24 ACSGWMW43-24 ACSGWMW44-24 ACSGWMW45-24** ACSGWMW17-24MS ACSGWMW17-24MSD VBLKST	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values for all system performance check compounds (SPCCs) were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample ACSGWTB01-24 (from SDG 4469) was identified as a trip blank. No volatile contaminants were found in this blank.

Samples ACSGWEB02-24 (from SDG 4469) and ACSGWEB01-24 were identified as equipment blanks. No volatile contaminants were found in these blanks with the following exceptions:

Equipment Blank ID	Sampling Date	Compound	Concentration	Associated Samples
ACSGWEB01-24	9/22/04	Methylene chloride	1.5 ug/L	ACSGWMW11-24 ACSGWMW23-24 ACSGWMW08-24 ACSGWMW32-24 ACSGWMW31-24** ACSGWMW28-24 ACSGWMW17-24 ACSGWDUP01-24 ACSGWMW55-24** ACSGWMW54R-24 ACSGWMW51-24
ACSGWEB02-24	9/23/04	Toluene	0.81 ug/L	ACSGWMW30-24 ACSGWMW33-24 ACSGWMW53-24** ACSGWMW52-24 ACSGWMW42-24 ACSGWMW43-24 ACSGWMW44-24 ACSGWMW45-24**

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ACSGWMW55-24**	Methylene chloride	1.6 ug/L	5.0UB ug/L
ACSGWMW54R-24	Methylene chloride	1.6 ug/L	5.0UB ug/L
ACSGWMW51-24	Methylene chloride	1.7 ug/L	5.0UB ug/L
ACSGWDUP01-24	Methylene chloride	1.7 ug/L	5.0UB ug/L

*Indicates change as the result of report review. SDG 4468

Sample	Compound	Reported Concentration	Modified Final Concentration
ACSGWMW08-24	Methylene chloride	1.5 ug/L	5.0UB ug/L
ACSGWMW11-24	Methylene chloride	1.6 ug/L	5.0UB ug/L
ACSGWMW17-24	Methylene chloride	1.8 ug/L	5.0UB ug/L
ACSGWMW23-24	Methylene chloride	1.7 ug/L	5.0UB ug/L
ACSGWMW28-24	Methylene chloride	1.6 ug/L	5.0UB ug/L
ACSGWMW31-24**	Methylene chloride	1.6 ug/L	5.0UB ug/L
ACSGWMW32-24	Methylene chloride	1.6 ug/L	5.0UB ug/L
ACSGWMW53-24**	Toluene	1.5 ug/L	5.0UB ug/L

*VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
VBLKST	1,2-Dichloroethane-d4	79 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ACSGWMW52-24	1,2-Dichloroethane-d4	78 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

*Removed Surrogate finding for sample ACSGWMW17-24.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XIV. System Performance

The system performance was within validation criteria for samples on which a EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by Level III criteria.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples ACSGWMW17-24 and ACSGWDUP01-24 and samples ACSGWMW45-24** and ACSGWDUP02-24 (from SDG 4469) were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	ACSGWDUP02-24	ACSGWMW45-24**	
1,2,4-Trimethylbenzene	15	15	0

*Indicates change as the result of report review. SDG 4468

Compound	Concentration (ug/L)		RPD
	ACSGWDUP02-24	ACSGWMW45-24**	
1,2-Dichlorobenzene	1.4	1.5	7
Cyclohexane	5.0	2.1	82
Methylcyclohexane	5.0U	1.2	200

Compound	Concentration (ug/L)		RPD
	ACSGWMW17-24	ACSGWDUP01-24	
Acetone	68	66	3
Methylene chloride	1.8	1.7	6
2-Butanone	13U	6.4	200
Tetrachloroethene	1.6	1.6	0
Isopropylbenzene	6.0	6.3	5
1,4-Dichlorobenzene	2.6	2.8	7
1,2-Dichlorobenzene	4.2	4.4	5
Methylcyclohexane	1.9	2.2	15
Ethylbenzene	1.7	1.8	6

*ACS-89
Volatiles - Data Qualification Summary - SDG 4468

SDG	Sample	Compound	Flag	A or P	Reason
4468	ACSGWMW33-24 ACSGWMW53-24** ACSGWMW52-24 ACSGWMW42-24 ACSGWMW43-24 ACSGWMW44-24 ACSGWMW45-24**	Tetrachloroethene 1,2,4-Trichlorobenzene Methylcyclohexane	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
4468	ACSGWMW52-24	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)

*Removed Surrogate finding for sample ACSGWMW17-24.

ACS-89
Volatiles - Laboratory Blank Data Qualification Summary - SDG 4468

No Sample Data Qualified in this SDG

ACS-89
Volatiles - Field Blank Data Qualification Summary - SDG 4468

SDG	Sample	Compound	Modified Final Concentration	A or P
4468	ACSGWMW55-24**	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW54R-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW51-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWDUP01-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW08-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW11-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW17-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW23-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW28-24	Methylene chloride	5.0UB ug/L	A

SDG	Sample	Compound	Modified Final Concentration	A or P
4468	ACSGWMW31-24**	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW32-24	Methylene chloride	5.0UB ug/L	A
4468	ACSGWMW53-24**	Toluene	5.0UB ug/L	A

LDC #: 12711A1
SDG #: 4468
Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET
Level III/IV

Date: 11/11/04
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/21 → 9/23/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	%RSD, $r^2 \geq 0.990$
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Compound quantitation/CRQLs	A	Not reviewed for Level III validation.
XIII.	Tentatively identified compounds (TICs)	A	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 7 + 8, D = 20 + ACSGWDUP02-24 SDG#4469
XVII.	Field blanks	SW	EB = 9 + ACSGWEB02-24, TB = ACSGWTB01-24 SDG # 4469

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	ACSGWMW11-24	11	ACSGWMW54R-24	21	ACSGWMW17-24MS	31	
2	ACSGWMW23-24	12	ACSGWMW51-24	22	ACSGWMW17-24MSD	32	
3	ACSGWMW08-24	13	ACSGWMW30-24	23	VBLKST	33	
4	ACSGWMW32-24	14	ACSGWMW33-24	24	VBLKTS	34	
5	ACSGWMW31-24**	15	ACSGWMW53-24**	25		35	
6	ACSGWMW28-24	16	ACSGWMW52-24	26		36	
7	ACSGWMW17-24	17	ACSGWMW42-24	27		37	
8	ACSGWDUP01-24	18	ACSGWMW43-24	28		38	
9	ACSGWEB01-24	19	ACSGWMW44-24	29		39	
10	ACSGWMW55-24**	20	ACSGWMW45-24**	30		40	

1-8 9/21/04
9-16 9/22/04
17-20 9/23/04

LDC #: 12711A1
DG #: 4468

VALIDATION FINDINGS CHECKLIST

Reviewer: F
2nd Reviewer: [illegible]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?	✓			
Did the initial calibration meet the curve fit acceptance criteria?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 30% and relative response factors (RRF) $\geq$ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) $\leq$ 25% and relative response factors (RRF) $\geq$ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓		N	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?		✓		
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			

LDC #: 12711A1
SDG #: 4468

VALIDATION FINDINGS CHECKLIST

Page: 2 of
Reviewer:
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	✓			
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	✓			
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			

LDC #: 12711A1
SDG #: 4468

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
XVII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target compounds were detected in the field blanks.	✓			

TARGET COMPOUND WORKSHEET

ETHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl chloride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene ✓	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene ✓	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

L[redacted]#: [redacted]11A[redacted] [redacted] [redacted] [redacted] [redacted]ALI[redacted]TIO[redacted]ND[redacted]S W[redacted]KSH[redacted] [redacted] [redacted] [redacted] [redacted]e: [redacted]/[redacted]

SDG #: 4468

Continuing Calibration

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	10/1/04	GS04/001B59	AA	35.40		VBLKST,	J/UJ/A
			KKK	28.10		14-22	↓
			Methylcyclohexane	27.24		↓	↓

CONCAL.1S

LDC #: 12711A-1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260)

Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

except #9

Blank units: ug/L Associated sample units: ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: 1 → 12

Compound	Blank ID 9	Blank ID	Sample Identification							
Sampling Date	9/22/04		10	11	12	8	3	1	7	2
Methylene chloride	1.5		1.6/5.0uB	1.6/5.0uB	1.7/5.0uB	1.7/5.0uB	1.5/5.0uB	1.6/5.0uB	1.8/5.0uB	1.7/5.0uB
~~Acetone~~										
Chloroform										
			6	5	4					
Methylene chloride			1.6/5.0uB	1.6/5.0uB	1.6/5.0uB					
CRQL										

Blank units: ug/L Associated sample units: ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: 13 → 20

Compound	Blank ID ACSGVFB02-4	Blank ID	Sample Identification							
Sampling Date	9/23/04		15							
~~Methylene chloride~~ cc	0.81		1.5/5.0uB							
Acetone										
~~Chloroform~~										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: [redacted]
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: [redacted] of [redacted]
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		VBLKST	DCE	79 (80-120)	J/UJ/P
				( )	
				( )	
		7		78 ( )	J/UJ/A
				( )	
				( )	
		16		78 ( )	J/UJ/P
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	86-118

LDC #: 12711A1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: B
2nd reviewer: K

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	ACSGWDUP02-~~20~~ 24	20	
DDD	15	15	0
JJJ	1.4	1.5	7
Cyclohexane	5.0	2.1	82
Methylcyclohexane	5.0U	1.2	200

Compound	Concentration (ug/L)		RPD
	7	8	
F	68	66	3
E	1.8	1.7	6
M	134	6.4	200
AA	1.6	1.6	0
VV	6.0	6.3	5

Compound	Concentration (ug/L)		RPD
	7	8	
HHH	2.6	2.8	7
JJJ	4.2	4.4	5
Methylcyclohexane	1.9	2.2	15
EE	1.7	1.8	6

Compound	Concentration ( )		RPD

LDC #: 12711A1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: KS
2nd Reviewer: AC

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (50ppb ~~250~~ std)	Recalculated RRF (50ppb ~~250~~ std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	8260 ICAL	9/15/04	Methylene chloride (1st internal standard)	0.33048	0.33048	0.33543955	0.35544	5.997	5.997
			~~Trichlorethene~~ Ethyl Benzene (2nd internal standard)	0.53557	0.53557	0.50914278	0.509143	4.712	4.712
			~~Toluene~~ 1,2 Dichlorobenzene (3rd internal standard)	1.38141	1.38141	1.3491685	1.3492	3.328	3.328
2	8260 ICAL	9/29/04	Methylene chloride (1st internal standard)	0.32134	0.32134	0.35094559	0.35094	11.076	11.076
			~~Trichlorethene~~ Ethyl Benzene (2nd internal standard)	0.46618	0.46618	0.49935571	0.499356	9.030	9.030
			~~Toluene~~ 1,2-Dichlorobenzene (3rd internal standard)	1.24950	1.24950	1.33243239	1.33243	6.341	6.341
3			Methylene chloride (1st internal standard)						
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						
4			Methylene chloride (1st internal standard)						
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 1271A1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	GS040928B59	9/28/04	Methylene chloride (1st internal standard)	0.33544	0.3502092	0.3502092	4.4	4.4
			~~Trichlorethene~~ Ethyl Benzene (2nd internal standard)	0.5094400	0.5116773	0.5116773	0.50	0.50
			~~Toluene~~ 1,2 Dichlorobenzene (3rd internal standard)	1.3491700	1.3645485	1.3645485	1.14	1.14
2	GS041001B59	10/1/04	Methylene chloride (1st internal standard)	0.3509400	0.3325504	0.3325504	5.24	5.24
			~~Trichlorethene~~ Ethyl Benzene (2nd internal standard)	0.499360	0.5210686	0.5210686	4.35	4.35
			~~Toluene~~ 1,2 Dichlorobenzene (3rd internal standard)	1.3324300	1.4297273	1.4297273	7.30	7.30
3			Methylene chloride (1st internal standard)					
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					
4			Methylene chloride (1st internal standard)					
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12711A1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: 15
2nd reviewer: [illegible]

METHOD: *GC/MS VOA (EPA SW 846 Method 8260B)*

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #5

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	50	47	94	94	0
Bromofluorobenzene		49	97	98	1
1,2-Dichloroethane-d4		53	106	106	0
Dibromofluoromethane		51	102	102	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

LDC #: 12711A1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSDC I * 2/(MSC + MSDC) MSC = Matrix spike percent recovery MSDC = Matrix spike duplicate percent recovery

MS/MSD sample: 21 + 22

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	—	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	50	50	0.0	43.05	49.07	86	86	98	98	13	13
Trichloroethene	↓	↓	↓	53.35	59.96	107	107	120	120	12	12
Benzene	↓	↓	↓	47.34	52.69	95	95	105	105	11	11
Toluene	↓	↓	↓	50.11	56.86	100	100	114	114	13	13
Chlorobenzene	↓	↓	↓	51.46	57.6	103	103	115	115	11	11

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

[redacted] #: [redacted] [redacted] [redacted] [redacted] VA[redacted]ATIO[redacted]FIN[redacted]GS [redacted]RKS[redacted]ET [redacted] [redacted] [redacted] [redacted] [redacted]age: [redacted] of [redacted]

SDG #: 4468

Laboratory Control Sample Results Verification

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: VST LCS

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	50	NA	51.05	NA	102	102				
Trichloroethene			53.32		107	107				
Benzene			46.66		93	93				
Toluene			49.76		100	100				
Chlorobenzene			49.49		99	99	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LCSCLC.1SB

LDC #: 27111A1
SDG #: 4468

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D.: #1, E:

Conc. = (3361)(250)( )
(320484)(0.335439)(5)( )
= 1.6 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

ACS-89
Data Validation Reports
LDC# 12711

Volatiles

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

LDC #12711
November 17, 2004

MWH Americas, Inc.
175 West Jackson Blvd, Suite 1900
Chicago, IL 60604-2814
ATTN: Mr. Chad Smith

SUBJECT: ACS Residential Wells, Data Validation

Dear Mr. Smith,

SUBJECT: Precision, Accuracy, Representativeness, Comparability, Completeness (PARCC) Summary Report for the ACS Residential Wells Project

Enclosed is the Precision, Accuracy, Representativeness, Comparability, Completeness (PARCC) Summary Report for the ACS Residential Wells project.

We appreciate this opportunity to support MWH Americas, Ic. in the performance of this project. Please feel free to call me at (760) 634-0437 if you have any questions.

Please feel free to contact us if you have any questions.

Sincerely,

ERauto

Erlinda T. Rauto
Operations Manager/Senior Chemist

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS SUMMARY REPORT

American Chemical Service

11/17/04

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Glossary

CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
DQO	Data Quality Objectives
LCS/LCSD	Laboratory Control Sample / Laboratory Control Sample Duplicate
MS/MSD	Matrix Spike / Matrix Spike Duplicate
PARCC	Precision,Accuracy,Representativeness,Comparability, Completeness
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
RRF	Relative Response Factor
RL	Reporting Limit
SDG	Sample Delivery Group
ug/Kg	Micrograms per Kilogram
ug/L	Micrograms per Liter
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS SUMMARY REPORT
American Chemical Service

1.0 INTRODUCTION

Remedial design/ remedial action was conducted at the American Chemical Service, Inc. NPL Site in Griffith, Indiana. This part of the site investigation included the collection and analyses of 40 groundwater samples including quality control (QC) samples. The analyses were performed by the following methods:

Volatile Organic Compounds by EPA SW 846 Method 8260B

Analytical services were provided by Compuchem who performed analyses on the groundwater samples. The samples were grouped into sample delivery groups (SDGs) of up to 20 field samples received by the laboratory. The environmental samples are associated with QA/QC samples designed to document the data quality of the entire SDG or a sub-group of samples within an SDG. Table I in Appendix A is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, and matrix. All shaded samples in Table I in Appendix A were reviewed under EPA Level 4 guidelines.

Approximately ten percent of the analytical data were validated according to EPA Level 4 data validation procedures and ninety percent of the analytical data were validated according to EPA Level 3 data validation procedures. The analytical data were evaluated for quality assurance and quality control (QA/QC) based on the following documents: *The Remedial Design/ Remedial Action PRP-Lead Project at the American Chemical Service, Inc. NPL Site, Griffith, Indiana Quality Assurance Project Plan,* November 2001, *Contract Laboratory Program National Functional Guidelines for Organic Data Review,* October 1999, and the *EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste.*

This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, and comparability (PARCC) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The PARCC summary report evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCC criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 4 presents a summary of the PARCC criteria by comparing quantitative parameters with acceptability criteria defined in the project DQO's. Qualitative PARCC criteria are also summarized in this section.

Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC

requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: trip blanks, equipment rinsate blanks, field duplicates, method blanks, laboratory control samples (LCSs), surrogate spikes, matrix spike/matrix spike duplicates (MS/MSDs), and laboratory duplicates.

Before conducting the PARCC evaluation, the analytical data were validated according to the *Remedial Design/ Remedial Action PRP-Lead Project at the American Chemical Service, Inc. NPL Site, Griffith, Indiana Quality Assurance Project Plan,* November 2001, and the Functional Guidelines for Organic Data Review (USEPA 1999) and EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste. Samples not meeting the project procedures manual and the Functional Guideline acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J — Estimated The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R — Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

UB — Analyte was not detected at or above the indicated concentration due to blank contamination. The "UB" flag is used to qualify any result detected in an environmental sample at a concentration less than 10 times the value of the concentration in any associated blank for common laboratory contaminants and less than 5 times the concentration in any associated blank for all other contaminants

B — Analyte was positively detected in a sample and in an associated blank. The "B" flag is used to to qualify any result detected in an environmental sample at a concentration greater than 10 times the value of the concentration in any associated blank for common laboratory contaminants and greater than 5 times the concentration in any associated blank for all other contaminants

UJ — Estimated/Nondetected Analyses were performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, internal standard, or other spike recovery.

Once the data are reviewed and qualified according to the *Remedial Design/ Remedial Action PRP-Lead Project at the American Chemical Service, Inc. NPL Site, Griffith, Indiana Quality Assurance Project Plan,* November 2001 and the functional guidelines, the data set is then evaluated using PARCC criteria. PARCC criteria provide an evaluation of overall data usability. The following is a discussion of PARCC criteria as related to the project DQOs.

Precision is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data. Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

Where D1 and D2 are the reported concentrations for sample and duplicate analyses. Precision is primarily assessed by calculating an RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD result as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS is similar to an MS/MSD sample in that the LCS is spiked with the same target analytes prior to preparation and analysis. However, the LCS is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS. Non-aqueous LCSs are prepared using solid media approved by the American Society for Testing and Materials (ASTM) for their homogeneity. The LCS measures laboratory efficiency in recovering target analytes from either a solid or aqueous matrix in the absence of matrix interferences.

Laboratory and field sampling precision are further evaluated by calculating RPDs for aqueous field sample duplicate pairs. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD samples or LCS/LCSD indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate pairs, results maybe reported in either the primary or duplicate samples at levels below the reporting limit or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicate pairs do not suggest a significant impact on the data quality.

Accuracy is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, MS/MSD, and standard, for volatile organic (VOC) and bis-2-chloroethyl ether analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS, and surrogate compounds added to environmental samples is evaluated with the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, field blanks and trip blanks.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 10 times the blank value for common laboratory contaminants; methylene chloride, acetone and 2-butanone or 5 times the blank value for other laboratory contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability is also dependent upon other PARCC criteria,

because only when precision, accuracy, and representativeness are known can data sets be compared with confidence.

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 95 percent.

Percent completeness is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

where:
%C = percent completeness
T = total number of sample results
R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the FSP or QAPP, with the number determined above.

The following sections present a review of QC data for each analytical method.

2.0 VOLATILE ORGANIC COMPOUNDS

A total of 40 groundwater samples were analyzed for volatile organic compounds (VOC) by EPA SW 846 Method 8260B. All volatile data were assessed to be valid since none of the 1920 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

2.1 Precision and Accuracy

2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Relative response factor (RRF), percent relative standard deviation (%RSD), and percent difference (%D) are the three major parameters used to measure the effectiveness of instrument calibration. RRF is a measure of the relative spectral response of an analyte compared to its internal standard. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The relative response factors for these compounds were above the criteria for acceptance of 0.05 in the initial calibration and/or the continuing calibration standards

Eighty nine VOC results were qualified detected estimated (J) and non-detected estimated (UJ). The percent difference between the initial calibration mean relative response factors and the continuing calibration relative response factors for acetone, 2-butanone, 1,2,4-trichlorobenzene, 4-methyl-2-pentanone, 2-hexanone, methyl acetate, methylcyclohexane and tetrachloroethene.

were outside the acceptance criteria of 25 percent. The affected samples were identified in the data validation reports.

2.1.2 Surrogates

Ninety six VOC results were qualified as detected estimated (J) and non-detected estimated (UJ) in two samples. The surrogate percent recovery for 1,2-dichloroethane-d4 was outside the acceptance criteria. The details regarding the qualification of results are provided in the data validation reports.

2.1.3 MS/MSD Samples

No data were qualified based on MS/MSD nonconformances. For those SDGs with MS/MSD results, the recoveries were evaluated against the acceptance criteria.

2.1.4 LCS Samples

No data were qualified based on LCS nonconformances. For those SDGs with LCS results, the recoveries were evaluated against the acceptance criteria.

2.1.5 Internal Standards

No data were qualified based on internal standard nonconformances. The recoveries and retention times were evaluated against the acceptance criteria.

2.1.6 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

2.1.7 Compound Quantitation and Target Identification

Due to compound quantitation nonconformances (ie, sample result exceeded calibration range) benzene in samples ACSGWMW56-24, ACSGWMW10C-24, ACSGWMW48-24 and ACSGWDUP03-24 was qualified as detected estimated (J). The details regarding the qualification of results are provided in the data validation reports.

All target identifications were found to be acceptable.

2.2 Representativeness

2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

2.2.2 Blanks

Method blanks and trip blanks were collected and analyzed to evaluate representativeness. The concentration for an individual target compounds in any of the two types of QA/QC blanks were used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results for organic compounds based on the following criteria. The validation qualifier codes used in the blank summary tables are described below.

> Results Below the RL If a sample result for the blank contaminant was less than the RL and less than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the sample result was amended as a non-detected at the RL for the target compound and qualified with UB
>
> Results Above the RL If a sample result for the blank contaminant was greater than the sample RL and less than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the sample result for the blank contaminant was amended as a non-detect at the concentration reported in the sample results and qualified with UB.
>
> If a sample result for the blank contaminant was greater than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the result was not amended and qualified with B.

2.2.2.1 Method Blanks

As a result of method blank contamination, several compounds were qualified as non-detected (UB) or detected (B). The details regarding the qualification of results are provided in the data validation reports.

2.2.2.2 Trip Blanks

As a result of trip blank contamination carbon disulfide were qualified as non-detected (UB). The details regarding the qualification of results are provided in the data validation reports.

2.2.2.3 Field Blanks

As a result of field blank contamination, methylene chloride and toluene were qualified as non-detected (UB). The details regarding the qualification of results are provided in the data validation reports.

2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target compounds detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

2.4 Completeness

The completeness level attained for volatile organic field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

3.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical method for volatile analyses throughout the project. No systematic variances in analytical performance were noted according to the laboratory SOW.

4.0 SUMMARY OF PARCC CRITERIA

The validation reports present the PARCC results for all SDGs. Each PARCC criterion is discussed in detail in the following sections.

4.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as MS/MSD, LCS, and surrogates. The precision and accuracy of the data set were considered acceptable after integration of qualification of estimated results as specifically noted in the data validation reports.

4.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable after qualification for blank contamination.

4.3 Comparability

Sampling frequency requirements were met in obtaining duplicates and necessary field blanks. The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. Holding times, sample preservation, and sample integrity were within QC criteria. The overall comparability is considered acceptable.

4.4 Completeness

Of the 1920 total analytes reported, none of the sample results were rejected. The completeness for all SDGs is as follows:

Parameter/Method	Total Analytes	No. of Rejects	%Completeness
Volatiles	1920	0	100
Total	**1920**	**0**	**100**

The completeness percentage based on rejected data met the 95 percent DQO goal. A less quantifiable loss of data occurred in the application of blank qualifications.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451701

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451701B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.35	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.23	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.36	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451701

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451701B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.38	J
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451701

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451701B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451705

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451705B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.11	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451705

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451705B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451705

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451705B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWC-24MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 48359

Sample wt/vol: 25 (g/ml) ML Lab File ID: 48359B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	4.1	
74-87-3	Chloromethane	3.9	
75-01-4	Vinyl Chloride	3.9	
74-83-9	Bromomethane	1.1	
75-00-3	Chloroethane	8.2	
75-69-4	Trichlorofluoromethane	5.3	
75-35-4	1,1-Dichloroethene	5.9	
75-15-0	Carbon disulfide	5.6	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.4	
67-64-1	Acetone	30	
79-20-9	Methyl acetate	3.3	
75-09-2	Methylene Chloride	5.8	
156-60-5	trans-1,2-Dichloroethene	6.0	
1634-04-4	Methyl-tert-butyl ether	4.7	
75-34-3	1,1-Dichloroethane	4.6	
156-59-2	cis-1,2-Dichloroethene	4.9	
78-93-3	2-butanone	18	
67-66-3	Chloroform	4.8	
71-55-6	1,1,1-Trichloroethane	4.4	
56-23-5	Carbon Tetrachloride	4.3	
71-43-2	Benzene	4.8	
107-06-2	1,2-Dichloroethane	4.6	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	4.7	
75-27-4	Bromodichloromethane	4.8	
10061-01-5	cis-1,3-Dichloropropene	3.6	
108-10-1	4-Methyl-2-pentanone	19	
108-88-3	Toluene	4.3	
10061-02-6	trans-1,3-Dichloropropene	3.2	
79-00-5	1,1,2-Trichloroethane	4.5	
127-18-4	Tetrachloroethene	5.0	
591-78-6	2-hexanone	16	
124-48-1	Dibromochloromethane	4.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWC-24MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 48359

Sample wt/vol: 25 (g/ml) ML Lab File ID: 48359B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	4.3	
108-90-7	Chlorobenzene	4.6	
100-41-4	Ethylbenzene	4.4	
108-38-3	m,p-Xylene	8.6	
95-47-6	o-Xylene	4.1	
100-42-5	Styrene	4.2	
75-25-2	Bromoform	4.6	
98-82-8	Isopropyl Benzene	4.2	
79-34-5	1,1,2,2-Tetrachloroethane	4.5	
541-73-1	1,3-Dichlorobenzene	4.5	
106-46-7	1,4-Dichlorobenzene	4.5	
95-50-1	1,2-Dichlorobenzene	4.6	
96-12-8	1,2-Dibromo-3-Chloropropane	3.2	
120-82-1	1,2,4-Trichlorobenzene	3.3	
1330-20-7	Xylene (total)	13	
110-82-7	Cyclohexane	4.4	
108-87-2	Methylcyclohexane	4.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWC-24MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 48360

Sample wt/vol: 25 (g/ml) ML Lab File ID: 48360B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	4.0	
74-87-3	Chloromethane	3.9	
75-01-4	Vinyl Chloride	3.9	
74-83-9	Bromomethane	1.4	
75-00-3	Chloroethane	6.7	
75-69-4	Trichlorofluoromethane	5.1	
75-35-4	1,1-Dichloroethene	5.8	
75-15-0	Carbon disulfide	5.6	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.2	
67-64-1	Acetone	30	
79-20-9	Methyl acetate	3.8	
75-09-2	Methylene Chloride	5.7	
156-60-5	trans-1,2-Dichloroethene	6.0	
1634-04-4	Methyl-tert-butyl ether	4.7	
75-34-3	1,1-Dichloroethane	4.7	
156-59-2	cis-1,2-Dichloroethene	4.9	
78-93-3	2-butanone	18	
67-66-3	Chloroform	4.9	
71-55-6	1,1,1-Trichloroethane	4.4	
56-23-5	Carbon Tetrachloride	4.2	
71-43-2	Benzene	4.8	
107-06-2	1,2-Dichloroethane	4.6	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	4.6	
75-27-4	Bromodichloromethane	4.6	
10061-01-5	cis-1,3-Dichloropropene	3.8	
108-10-1	4-Methyl-2-pentanone	19	
108-88-3	Toluene	4.3	
10061-02-6	trans-1,3-Dichloropropene	3.4	
79-00-5	1,1,2-Trichloroethane	4.3	
127-18-4	Tetrachloroethene	4.9	
591-78-6	2-hexanone	17	
124-48-1	Dibromochloromethane	4.5	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWC-24MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 48360

Sample wt/vol: 25 (g/ml) ML Lab File ID: 48360B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	4.7	
108-90-7	Chlorobenzene	4.5	
100-41-4	Ethylbenzene	4.4	
108-38-3	m,p-Xylene	8.8	
95-47-6	o-Xylene	4.2	
100-42-5	Styrene	4.2	
75-25-2	Bromoform	4.8	
98-82-8	Isopropyl Benzene	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	4.4	
541-73-1	1,3-Dichlorobenzene	4.7	
106-46-7	1,4-Dichlorobenzene	4.5	
95-50-1	1,2-Dichlorobenzene	4.5	
96-12-8	1,2-Dibromo-3-Chloropropane	3.0	
120-82-1	1,2,4-Trichlorobenzene	3.3	
1330-20-7	Xylene (total)	13	
110-82-7	Cyclohexane	4.2	
108-87-2	Methylcyclohexane	4.2	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451704

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451704B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.66	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451704

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451704B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451704

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451704B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451706

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451706B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451706

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451706B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451706

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451706B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451702

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451702B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451702

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451702B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451702

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451702B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWTB-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451707

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451707B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.18	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.29	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWTB-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451707

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451707B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.32	J
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWTB-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451707

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451707B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451703

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451703B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451703

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451703B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

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/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix: (soil/water) WATER Lab Sample ID: 451703

Sample wt/vol: 25 (g/ml) ML Lab File ID: 451703B61

Level: (low/med) LOW Date Received: 09/29/04

% Moisture: not dec. _____ Date Analyzed: 10/08/04

GC Column: RTX-VMS ID: 0.18 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

ACS-89
Data Validation Reports
LDC# 12710

Volatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 27 through September 28, 2004

LDC Report Date: November 15, 2004

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4517

Sample Identification

ACSGWPWA-24
ACSGWPWT-24
ACSGWPWZ-24
ACSGWPWD-24
ACSGWPWC-24
ACSGWPWDUP-24
ACSGWPWTB-24
ACSGWPWC-24MS
ACSGWPWC-24MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

The review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals. All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all system performance check compounds (SPCCs) were within method criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/8/04	Chloromethane Bromomethane Methyl acetate trans-1,2-Dichloroethene 2-Hexanone	30.17 28.50 30.12 27.77 27.37	All samples in SDG 4517	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values for all system performance check compounds (SPCCs) were within method criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample ACSGWPWTB-24 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
ACSGWPWTB-24	9/28/04	Methylene chloride Toluene Dibromochloromethane Bromoform	0.18 ug/L 0.13 ug/L 0.29 ug/L 0.32 ug/L	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWC-24 ACSGWPWDUP-24

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
ACSGWPWA-24	Methylene chloride Dibromochloromethane Bromoform	0.12 ug/L 0.36 ug/L 0.38 ug/L	0.50UB ug/L 0.50UB ug/L 0.50UB ug/L
ACSGWPWT-24	Methylene chloride	0.12 ug/L	0.50UB ug/L

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
ACSGWPWA-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	72 (80-120) 77 (80-120) 74 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ACSGWPWT-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	69 (80-120) 75 (80-120) 76 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ACSGWPWZ-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	72 (80-120) 76 (80-120) 77 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ACSGWPWD-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	71 (80-120) 74 (80-120) 72 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
ACSGWPWC-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	72 (80-120) 75 (80-120) 73 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ACSGWPWDUP-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	73 (80-120) 76 (80-120) 75 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P
ACSGWPWTB-24	1,2-Dichloroethane-d4 Toluene-d8 Bromofluorobenzene	74 (80-120) 73 (80-120) 70 (80-120)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples ACSGWPWC-24 and ACSGWPWDUP-24 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	ACSGWPWC-24	ACSGWPWDUP-24	
Carbon disulfide	0.11	0.50U	200

ACS-89
Volatiles - Data Qualification Summary - SDG 4517

SDG	Sample	Compound	Flag	A or P	Reason
4517	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWC-24 ACSGWPWDUP-24 ACSGWPWTB-24	Chloromethane Bromomethane Methyl acetate trans-1,2-Dichloroethene 2-Hexanone	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
4517	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWC-24 ACSGWPWDUP-24 ACSGWPWTB-24	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)

ACS-89
Volatiles - Laboratory Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

ACS-89
Volatiles - Field Blank Data Qualification Summary - SDG 4517

SDG	Sample	Compound	Modified Final Concentration	A or P
4517	ACSGWPWA-24	Methylene chloride Dibromochloromethane Bromoform	0.50UB ug/L 0.50UB ug/L 0.50UB ug/L	A
4517	ACSGWPWT-24	Methylene chloride	0.50UB ug/L	A

LDC #: 12710A1
SDG #: 4517
Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/10/04
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/27 - 9/28/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	A	SPCC RRF only
IV.	Continuing calibration	SW	↓
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D = 5 & 6
XVII.	Field blanks	SW	TB = 7

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	ACSGWPWA-24 *	11	VBLKWX	21		31	
2	ACSGWPWT-24 *	12		22		32	
3	ACSGWPWZ-24 *	13		23		33	
4	ACSGWPWD-24 *	14		24		34	
5	ACSGWPWC-24 * D	15		25		35	
6	ACSGWPWDUP-24 * D	16		26		36	
7	ACSGWPWTB-24 TB	17		27		37	
8	ACSGWPWC-24MS	18		28		38	
9	ACSGWPWC-24MSD	19		29		39	
10		20		30		40	

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Page: 1 of 3
Reviewer: B
2nd Reviewer: EC

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		✓		
Did the initial calibration meet the curve fit acceptance criteria?			✓	
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?	✓			
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?		✓		
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	✓		✓	
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	✓		✓	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.	✓			

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: B
2nd Reviewer: R

Validation Area	Yes	No	NA	Findings/Comments
XVII. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. #1, methylene chloride

Conc. = (1586)(125)( )
(261299)(0.25279686)(25)

= 0.12 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualificati

TARGET COMPOUND WORKSHEET

ETHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. 1,2-Dichlorotetrafluoroethane
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethyltoluene
C. Vinyl chloride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Methyl ethyl ketone	FFF. 1,3-Dichlorobenzene	XXX. Di-isopropyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YYY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanone	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Amyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropane	KKK. 1,2,4-Trichlorobenzene	CCCC.1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJJ. Methacrylonitrile
Q. 1,2-Dichloropropane**	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL.

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 12716A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: A
2nd Reviewer: JC

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	10/8/04	CT041008BC1	A	30.17		All + BLK	J/UJ/A
	1537		B	28.50			
			Methyl Acetate	30.12		↓	↓
			PPP	27.77			
			Z	27.37			

LDC #: 12748A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260)
Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L Associated sample units: ug/L
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other:_____ Associated Samples: 1→6

Compound	Blank ID 7	Blank ID__	Sample Identification							
Sampling Date	9/28/04		1		2					
Methylene chloride	0.18		0.12/0.50UB		0.12/0.50UB					
~~Acetone~~ CC	0.13		–		–					
~~Chloro~~form T	0.29		0.36/0.50UB		–					
X	0.32		0.38/0.50UB		–					
CRQL										

Blank units:_____ Associated sample units:_____
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other:_____ Associated Samples:_____

Compound	Blank ID__	Blank ID__	Sample Identification							
Sampling Date										
Methylene chloride										
Acetone										
Chloroform										
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

FBLKASC2.1SB

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Date	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
		1	DCE	72 (80-120)	J/UJ/P
			TOL	77 ( )	
			BFB	74 ( )	
		2		69 ( )	
				75 ( )	
				76 ( )	
		3		72 ( )	
				76 ( )	
				77 ( )	
		4		71 ( )	
				74 ( )	
				72 ( )	
		5		72 ( )	
				75 ( )	
				73 ( )	
		6		73 ( )	
				76 ( )	
				75 ( )	
		7		74 ( )	
				73 ( )	
				70 ( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	81-117	88-110
SMC2 (BFB) = Bromofluorobenzene	74-121	86-115
SMC3 (DCE) = 1,2-Dichloroethane-d4	80-120	80-120
SMC4 (DFM) = Dibromofluoromethane	80-120	86-118

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: B
2nd reviewer: SC

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

X N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD
	5	6	
G	0.11	0.50U	200

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

Compound	Concentration ( )		RPD

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: B
2nd Reviewer: R

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (125ng std)	Recalculated RRF (125ng std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	8260-ICAL 10/4/04	10/4/04	Methylene chloride (1st internal standard)	0.24580	0.24580	0.25279686	0.2528	10.012	10.01
			~~Trichlorethene~~ Ethylbenzene (2nd internal standard)	1.06342	1.0634	0.97789851	0.9779	7.377	7.38
			~~Toluene~~ 1,2-Dichlorobenzene (3rd internal standard)	1.93978	1.9398	1.83805868	1.8381	4.285	4.28
2			Methylene chloride (1st internal standard)						
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						
3			Methylene chloride (1st internal standard)						
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						
4			Methylene chloride (1st internal standard)						
			Trichlorethene (2nd internal standard)						
			Toluene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	CV041008B6	10/8/04	Methylene chloride (1st internal standard)	0.252800	0.2831416	0.2831	12.0	12.0
			~~Trichlorethene~~ Ethylbenzene (2nd internal standard)	0.977900	0.9625257	0.9625	1.57	1.57
			~~Toluene~~ 1,2-Dichlorobenzene (3rd internal standard)	1.8380600	1.7972728	1.797	2.22	2.22
2			Methylene chloride (1st internal standard)					
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					
3			Methylene chloride (1st internal standard)					
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					
4			Methylene chloride (1st internal standard)					
			Trichlorethene (2nd internal standard)					
			Toluene (3rd internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: R
2nd reviewer: R

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	5.0	3.8	77	76	1
Bromofluorobenzene		3.7	74	74	0
1,2-Dichloroethane-d4		3.6	72	72	0
Dibromofluoromethane		4.3	86	86	0

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 2 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSDC I * 2/(MSC + MSDC) MSC = Matrix spike percent recovery MSDC = Matrix spike duplicate percent recovery

MS/MSD sample: 8 + 9

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	----	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	5	5	0.0	5.871	5.794	117	117	116	116	1	1
Trichloroethene	5			5.292	5.259	106	106	105	105	1	1
Benzene	5			4.848	4.807	97	97	96	96	1	1
Toluene	5			4.337	4.334	87	87	87	87	0	0
Chlorobenzene	5			4.552	4.541	91	91	91	91	0	0

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A1
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD) LCS = Laboraotry control sample percent recovery LCSD = Laboratory control sample duplicate percent recovery

LCS ID: VWXLCS

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	5	NA	4.347	NA	87	87				
Trichloroethene			5.231		105	105				
Benzene			4.941		99	99				
Toluene			4.671		93	93				
Chlorobenzene			4.873		97	97	NA			

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

1LCC
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451701 Date Received: 09/29/2004

Lab File ID: 451701A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	bis(2-Chloroethyl)ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	bis(2-Chloroethoxy)methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	20	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5.0	U

1LCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451701 Date Received: 09/29/2004

Lab File ID: 451701A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-nitrosodiphenylamine (1)	5.0	U
95-94-3	1,2,4,5 Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	5.0	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	bis(2-Ethylhexyl)phthalate	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U

(1) - Cannot be separated from Diphenylamine

1LCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451701 Date Received: 09/29/2004

Lab File ID: 451701A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

Number TICs found: 0

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
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FORM I LCSV-TIC OLC03.2

1LCC
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451705 Date Received: 09/29/2004

Lab File ID: 451705JA66 Date Extracted: 10/02/2004

Sample Volume: 1075(ML) Date Analyzed: 10/05/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	bis(2-Chloroethyl)ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	bis(2-Chloroethoxy)methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	20	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5.0	U

1LCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451705 Date Received: 09/29/2004

Lab File ID: 451705JA66 Date Extracted: 10/02/2004

Sample Volume: 1075(ML) Date Analyzed: 10/05/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-nitrosodiphenylamine (1)	5.0	U
95-94-3	1,2,4,5 Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	5.0	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	bis(2-Ethylhexyl)phthalate	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U

(1) - Cannot be separated from Diphenylamine

1LCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451705 Date Received: 09/29/2004

Lab File ID: 451705JA66 Date Extracted: 10/02/2004

Sample Volume: 1075(ML) Date Analyzed: 10/05/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

Number TICs found: 1

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01		UNKNOWN	12.68	9.3	J
02					
03					
04					
05					
06					
07					
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12					
13					
14					
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1LCC
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451704 Date Received: 09/29/2004

Lab File ID: 451704A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	bis(2-Chloroethyl)ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	bis(2-Chloroethoxy)methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	20	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5.0	U

1LCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451704 Date Received: 09/29/2004

Lab File ID: 451704A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-nitrosodiphenylamine (1)	5.0	U
95-94-3	1,2,4,5 Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	5.0	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	bis(2-Ethylhexyl)phthalate	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U

(1) - Cannot be separated from Diphenylamine

1LCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451704 Date Received: 09/29/2004

Lab File ID: 451704A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

Number TICs found: 1

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01		UNKNOWN	18.57	1.9	J
02					
03					
04					
05					
06					
07					
08					
09					
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12					
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1LCC
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451706 Date Received: 09/29/2004

Lab File ID: 451706A66 Date Extracted: 10/02/2004

Sample Volume: 1050(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	bis(2-Chloroethyl)ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	bis(2-Chloroethoxy)methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	20	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5.0	U

1LCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451706 Date Received: 09/29/2004

Lab File ID: 451706A66 Date Extracted: 10/02/2004

Sample Volume: 1050(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-nitrosodiphenylamine (1)	5.0	U
95-94-3	1,2,4,5 Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	5.0	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	bis(2-Ethylhexyl)phthalate	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U

(1) - Cannot be separated from Diphenylamine

1LCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451706 Date Received: 09/29/2004

Lab File ID: 451706A66 Date Extracted: 10/02/2004

Sample Volume: 1050(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

Number TICs found: 2

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01		UNKNOWN	12.68	8.4	J
02		UNKNOWN	18.57	2.4	J
03					
04					
05					
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LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451702 Date Received: 09/29/2004

Lab File ID: 451702A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	bis(2-Chloroethyl)ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	bis(2-Chloroethoxy)methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	20	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5.0	U

1LCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451702 Date Received: 09/29/2004

Lab File ID: 451702A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-nitrosodiphenylamine (1)	5.0	U
95-94-3	1,2,4,5 Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	5.0	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	bis(2-Ethylhexyl)phthalate	4.8	
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U

(1) - Cannot be separated from Diphenylamine

1LCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451702 Date Received: 09/29/2004

Lab File ID: 451702A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

Number TICs found: 0

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
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27					
28					
29					
30					

FORM I LCSV-TIC OLC03.2

1LCC
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451703 Date Received: 09/29/2004

Lab File ID: 451703A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
100-52-7	Benzaldehyde	5.0	U
108-95-2	Phenol	5.0	U
111-44-4	bis(2-Chloroethyl)ether	5.0	U
95-57-8	2-Chlorophenol	5.0	U
95-48-7	2-Methylphenol	5.0	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5.0	U
98-86-2	Acetophenone	5.0	U
106-44-5	4-Methylphenol	5.0	U
621-64-7	N-Nitroso-di-n-propylamine	5.0	U
67-72-1	Hexachloroethane	5.0	U
98-95-3	Nitrobenzene	5.0	U
78-59-1	Isophorone	5.0	U
88-75-5	2-Nitrophenol	5.0	U
105-67-9	2,4-Dimethylphenol	5.0	U
111-91-1	bis(2-Chloroethoxy)methane	5.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
91-20-3	Naphthalene	5.0	U
106-47-8	4-Chloroaniline	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
105-60-2	Caprolactam	5.0	U
59-50-7	4-Chloro-3-methylphenol	5.0	U
91-57-6	2-Methylnaphthalene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
88-06-2	2,4,6-Trichlorophenol	5.0	U
95-95-4	2,4,5-Trichlorophenol	20	U
92-52-4	1,1'-Biphenyl	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
208-96-8	Acenaphthylene	5.0	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5.0	U

1LCD
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451703 Date Received: 09/29/2004

Lab File ID: 451703A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
84-66-2	Diethylphthalate	5.0	U
86-73-7	Fluorene	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-nitrosodiphenylamine (1)	5.0	U
95-94-3	1,2,4,5 Tetrachlorobenzene	5.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
118-74-1	Hexachlorobenzene	5.0	U
1912-24-9	Atrazine	5.0	U
87-86-5	Pentachlorophenol	5.0	U
85-01-8	Phenanthrene	5.0	U
120-12-7	Anthracene	5.0	U
84-74-2	Di-n-butylphthalate	5.0	U
206-44-0	Fluoranthene	5.0	U
129-00-0	Pyrene	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
91-94-1	3,3'-Dichlorobenzidine	5.0	U
56-55-3	Benzo(a)anthracene	5.0	U
218-01-9	Chrysene	5.0	U
117-81-7	bis(2-Ethylhexyl)phthalate	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
205-99-2	Benzo(b)fluoranthene	5.0	U
207-08-9	Benzo(k)fluoranthene	5.0	U
50-32-8	Benzo(a)pyrene	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U
53-70-3	Dibenzo(a,h)anthracene	5.0	U
191-24-2	Benzo(g,h,i)perylene	5.0	U

1) - Cannot be separated from Diphenylamine

1LCG
LOW CONCENTRATION WATER SEMIVOLATILE ORGANICS ANALYSIS
DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Contract: OLC03.2 REV

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451703 Date Received: 09/29/2004

Lab File ID: 451703A66 Date Extracted: 10/02/2004

Sample Volume: 1100(ML) Date Analyzed: 10/04/2004

Concentrated Extract Volume: 1000(UL) Dilution Factor: 1.0

Injection Volume: 1.0(UL)

Number TICs found: 0

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC. (UG/L)	Q
01					
02					
03					
04					
05					
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FORM I LCSV-TIC OLC03.2

ACS-89
Data Validation Reports
LDC# 12710

Semivolatiles

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 27 through September 28, 2004

LDC Report Date: November 15, 2004

Matrix: Water

Parameters: Semivolatiles

Validation Level: EPA Level IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4517

Sample Identification

ACSGWPWA-24
ACSGWPWT-24
ACSGWPWZ-24
ACSGWPWD-24
ACSGWPWC-24
ACSGWPWDUP-24
ACSGWPWC-24MS
ACSGWPWC-24MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work OLC03.2 for Semivolatiles.

The review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
9/23/04	Benzaldehyde Atrazine	33.2 38.7	All samples in SDG 4517	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
10/4/04	2,4-Dinitrophenol 3,3'-Dichlorobenzidine	29.9 29.1	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWDUP-24 SBLKQX	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
10/5/04	Benzaldehyde 2,2'-Oxybis(1-chloropropane) Atrazine 3,3'-Dichlorobenzidine	25.1 37.6 45.7 32.1	ACSGWPWC-24 ACSGWPWC-24MS ACSGWPWC-24MSD	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
ACSGWPWC-24MS/MSD (ACSGWPWC-24)	4-Nitrophenol Pentachlorophenol 4-Chloro-3-methylphenol	96 (10-80) 176 (9-103) -	107 (10-80) 192 (9-103) 101 (23-97)	- - -	J (all detects) J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples are not required and were not performed.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples ACSGWPWC-24 and ACSGWPWDUP-24 were identified as field duplicates. No semivolatiles were detected in any of the samples.

ACS-89
Semivolatiles - Data Qualification Summary - SDG 4517

SDG	Sample	Compound	Flag	A or P	Reason
4517	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWC-24 ACSGWPWDUP-24	Benzaldehyde Atrazine	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
4517	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWDUP-24	2,4-Dinitrophenol 3,3'-Dichlorobenzidine	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
4517	ACSGWPWC-24	Benzaldehyde 2,2'-Oxybis(1-chloropropane) Atrazine 3,3'-Dichlorobenzidine	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
4517	ACSGWPWC-24	4-Nitrophenol Pentachlorophenol 4-Chloro-3-methylphenol	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)

ACS-89
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

ACS-89
Semivolatiles - Field Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

LDC #: 12710A2
SDG #: 4517
Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 12/11/04
Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS Semivolatiles (EPA CLP SOW OLC03.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/27 - 9/28/04
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	
IV.	Continuing calibration	SW	
V.	Blanks	A	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	N	not required
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	
XII.	Compound quantitation/CRQLs	A	
XIII.	Tentatively identified compounds (TICs)	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	ND	D = 5 + 6
XVII.	Field blanks	N	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples: Water

1	ACSGWPWA-24	11	SBLKQX	21		31	
2	ACSGWPWT-24	12		22		32	
3	ACSGWPWZ-24	13		23		33	
4	ACSGWPWD-24	14		24		34	
5	ACSGWPWC-24	15		25		35	
6	ACSGWPWDUP-24	16		26		36	
7	ACSGWPWC-24MS	17		27		37	
8	ACSGWPWC-24MSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 12710A2
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer:
2nd Reviewer:

Method: Semivolatiles (EPA CLP SOW OLC~~02.0~~ 03.2)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/MS instrument performance check				
Were the DFTPP performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 30% and relative response factors (RRF) ≥ 0.05?			✓	
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 25% and relative response factors (RRF) ≥ 0.05?		✓		
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?	✓			
If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	
VII. Matrix spike/Matrix spike duplicates				
Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?		✓		
Was an LCS analyzed per extraction batch?			✓	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?			✓	

LDC #: 12710A2
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Page: 2 of
Reviewer:
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	✓			
Were retention times within ± 20 seconds from the associated calibration standard?	✓			
XI. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?	✓			
Were relative intensities of the major ions within ± 20% between the sample and the reference spectra?	✓			
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target compounds were detected in the field duplicates.		✓		
XVII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

METHOD: GC/MS BNA (EPA CLP SOW OLC~~02.0~~ 03.2)

A. Phenol	N. 2-Nitrophenol	AA. 2-Chloronaphthalene	NN. Fluorene	AAA. Butylbenzylphthalate
B. Bis (2-chloroethyl) ether	O. 2,4-Dimethylphenol	BB. 2-Nitroaniline	OO. 4-Nitroaniline	BBB. 3,3'-Dichlorobenzidine
C. 2-Chlorophenol	P. Bis(2-chloroethoxy)methane	CC. Dimethylphthalate	PP. 4,6-Dinitro-2-methylphenol	CCC. Benzo(a)anthracene
D. 1,3-Dichlorobenzene	Q. 2,4-Dichlorophenol	DD. Acenaphthylene	QQ. N-Nitrosodiphenylamine (1)	DDD. Chrysene
E. 1,4-Dichlorobenzene	R. 1,2,4-Trichlorobenzene	EE. 2,6-Dinitrotoluene	RR. 4-Bromophenyl-phenylether	EEE. Bis(2-ethylhexyl)phthalate
F. 1,2-Dichlorobenzene	S. Naphthalene	FF. 3-Nitroaniline	SS. Hexachlorobenzene	FFF. Di-n-octylphthalate
G. 2-Methylphenol	T. 4-Chloroaniline	GG. Acenaphthene	TT. Pentachlorophenol	GGG. Benzo(b)fluoranthene
H. 2,2'-Oxybis(1-chloropropane)	U. Hexachlorobutadiene	HH. 2,4-Dinitrophenol	UU. Phenanthrene	HHH. Benzo(k)fluoranthene
I. 4-Methylphenol	V. 4-Chloro-3-methylphenol	II. 4-Nitrophenol	VV. Anthracene	III. Benzo(a)pyrene
J. N-Nitroso-di-n-propylamine	W. 2-Methylnaphthalene	JJ. Dibenzofuran	WW. Carbazole	JJJ. Indeno(1,2,3-cd)pyrene
K. Hexachloroethane	X. Hexachlorocyclopentadiene	KK. 2,4-Dinitrotoluene	XX. Di-n-butylphthalate	KKK. Dibenz(a,h)anthracene
L. Nitrobenzene	Y. 2,4,6-Trichlorophenol	LL. Diethylphthalate	YY. Fluoranthene	LLL. Benzo(g,h,i)perylene
M. Isophorone	Z. 2,4,5-Trichlorophenol	MM. 4-Chlorophenyl-phenyl ether	ZZ. Pyrene	

Notes:

COMPNDL.2LC

LDC #: 12710A2
SDG #: 4577

VALIDATION FINDINGS WORKSHEET
Initial Calibration

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS BNA (EPA CLP SOW OLC~~02.0~~ 03.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory conduct an acceptable 5 point calibration prior to sample analysis?

Y N N/A Were all relative standard deviations (%RSD) ≤30.0% and Relative Response Factors (RRF) ≥0.05?

#	Date	Standard ID	Compound	Finding %RSD (Limit: ≤30.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	9/23/04	OLC03.2 ICAL	Benzaldehyde	33.2		All + BLK	J/UJ/A
			Atrazine	38.7		↓	↓

A. Phenol*
B. Bis(2-chloroethyl)ether*
C. 2-Chlorophenol*
D. 1,3-Dichlorobenzene*
E. 1,4-Dichlorobenzene*
F. 1,2-Dichlorobenzene*
G. 2-Methylphenol*
H. 2,2'-Oxybis(1-chloropropane)
I. 4-Methylphenol*
J. N-Nitroso-di-n-propylamine*
K. Hexachloroethane*
L. Nitrobenzene*
M. Isophorone*
N. 2-Nitrophenol*
O. 2,4-Dimethylphenol*
P. Bis(2-chloroethoxy)methane*
Q. 2,4-Dichlorophenol*
R. 1,2,4-Trichlorobenzene*
S. Naphthalene*
T. 4-Chloroaniline
U. Hexachlorobutadiene
V. 4-Chloro-3-methylphenol*
W. 2-Methylnaphthalene*
X. Hexachlorocyclopentadiene
Y. 2,4,6-Trichlorophenol*
Z. 2,4,5-Trichlorophenol*
AA. 2-Chloronaphthalene*
BB. 2-Nitroaniline
CC. Dimethylphthalate
DD. Acenaphthylene*
EE. 2,6-Dinitrotoluene*
FF. 3-Nitroaniline
GG. Acenaphthene*
HH. 2,4-Dinitrophenol
II. 4-Nitrophenol
JJ. Dibenzofuran*
KK. 2,4-Dinitrotoluene*
LL. Diethylphthalate
MM. 4-Chlorophenyl-phenyl ether*
NN. Fluorene*
OO. 4-Nitroaniline
PP. 4,6-Dinitro-2-methylphenol
QQ. N-Nitrosodiphenylamine (1)
RR. 4-Bromophenyl-phenylether*
SS. Hexachlorobenzene*
TT. Pentachlorophenol*
UU. Phenanthrene*
VV. Anthracene*
WW. Carbazole
XX. Di-n-butylphthalate
YY. Fluoranthene*
ZZ. Pyrene*
AAA. Butylbenzylphthalate
BBB. 3,3'-Dichlorobenzidine
CCC. Benzo(a)anthracene*
DDD. Chrysene*
EEE. Bis(2-ethylhexyl)phthalate
FFF. Di-n-octylphthalate
GGG. Benzo(b)fluoranthene*
HHH. Benzo(k)fluoranthene*
III. Benzo(a)pyrene*
JJJ. Indeno(1,2,3-cd)pyrene*
KKK. Dibenz(a,h)anthracene*
LLL. Benzo(g,h,i)perylene*
MMM. _____

LDC #: 12[redacted]A2

SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1

Reviewer:

2nd Reviewer:

METHOD: GC/MS BNA (EPA CLP SOW OLO~~02.0~~ 03.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument?

Y N N/A Were all percent differences (%D) ≤25.0% and Relative Response Factors ≥0.05?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤25.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	10/4/04	HG041004A66	H H	29.9		All + BLK	J/UJ/A
			BBB	29.1		↓ except #5 7+8	↓
	10/5/04	HG041005A66	Benzaldehyde H	25.1		5, 7, B	J/UJ/A
				37.6			
			Atrazine	45.7		↓	↓
			BBB	32.1			

A. Phenol*
B. Bis (2-chloroethyl) ether*
C. 2-Chlorophenol*
D. 1,3-Dichlorobenzene*
E. 1,4-Dichlorobenzene*
F. 1,2-Dichlorobenzene*
G. 2-Methylphenol*
H. 2,2'-Oxybis(1-chloropropane)
I. 4-Methylphenol*
J. N-Nitroso-di-n-propylamine*
K. Hexachloroethane*
L. Nitrobenzene*
M. Isophorone*
N. 2-Nitrophenol*
O. 2,4-Dimethylphenol*
P. Bis(2-chloroethoxy)methane*
Q. 2,4-Dichlorophenol*
R. 1,2,4-Trichlorobenzene*
S. Naphthalene*
T. 4-Chloroaniline
U. Hexachlorobutadiene
V. 4-Chloro-3-methylphenol*
W. 2-Methylnaphthalene*
X. Hexachlorocyclopentadiene
Y. 2,4,6-Trichlorophenol*
Z. 2,4,5-Trichlorophenol*
AA. 2-Chloronaphthalene*
BB. 2-Nitroaniline
CC. Dimethylphthalate
DD. Acenaphthylene*
EE. 2,6-Dinitrotoluene*
FF. 3-Nitroaniline
GG. Acenaphthene*
HH. 2,4-Dinitrophenol
II. 4-Nitrophenol
JJ. Dibenzofuran*
KK. 2,4-Dinitrotoluene*
LL. Diethylphthalate
MM. 4-Chlorophenyl-phenyl ether*
NN. Fluorene*
OO. 4-Nitroaniline
PP. 4,6-Dinitro-2-methylphenol
QQ. N-Nitrosodiphenylamine (1)
RR. 4-Bromophenyl-phenylether*
SS. Hexachlorobenzene*
TT. Pentachlorophenol*
UU. Phenanthrene*
VV. Anthracene*
WW. Carbazole
XX. Di-n-butylphthalate
YY. Fluoranthene*
ZZ. Pyrene*
AAA. Butylbenzylphthalate
BBB. 3,3'-Dichlorobenzidine
CCC. Benzo(a)anthracene*
DDD. Chrysene*
EEE. Bis(2-ethylhexyl)phthalate
FFF. Di-n-octylphthalate
GGG. Benzo(b)fluoranthene*
HHH. Benzo(k)fluoranthene*
III. Benzo(a)pyrene*
JJJ. Indeno(1,2,3-cd)pyrene*
KKK. Dibenz(a,h)anthracene*
LLL. Benzo(g,h,i)perylene*
MMM. _____

CONCAL2LC

LDC #: 12710 A2
SDG #: 4577 co3.2

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: GC/MS BNA (EPA CLP SOW OLC02.0)

Please see qualification below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were percent recoveries (%R) for surrogates within QC limits stated below?
Y N N/A If 2 or more base neutral or acid surrogates were outside QC limits, was a reanalysis performed to confirm %R?
Y N N/A If any %R was less than 10 percent, was a reanalysis performed to confirm %R?

#	Date	Sample ID	Surrogate	%R (Limits)	Qualifications
		1	4CA	78 (8-70)	NO QUAL
				( )	
		2	↓	83 (↓)	
				( )	
		3	↓	75 (↓)	
				( )	
		4	↓	83 (↓)	
				( )	
		6	↓	71 (↓)	
				( )	
		8	4CA	83 (8-70)	MSD
			BCE	119 (41-94)	↓
				( )	
		7	BCE	103 (41-94)	MS
				( )	
		5	BCE	95 (↓)	↓
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	
				( )	

* QC limits are advisory

	QC Limits (Water)
S1 (NBZ) = Nitrobenzene-d5	40-110
S2 (FBP) = 2-Fluorobiphenyl	30-110
S3 (TPH) = Terphenyl-d14	20-140
S4 (PHL) = Phenol-d5	15-115
S5 (2FP) = 2-Fluorophenol	15-110
S6 (TBP) = 2,4,6-Tribromophenol	15-130

4CA = 4-chloroaniline-d4
BCE = bis-(2-chloroethyl) ether-d8

SUR.2LC

[redacted] #: [redacted] 2 [redacted]
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS BNA (EPA CLP SOW OLC~~02.0~~ 03.2)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG? (Not required)

Y N N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		7+8	II	96 (10-80)	107 (10-80)	( )	5	detect /A
			TT	176 (9-103)	192 (9-103)	( )	↓	↓
			V	( )	101 (23-97)	( )	↓	↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

	Compound	QC Limits (Water)	RPD (Water)		Compound	QC Limits (Water)	RPD (Water)		Compound	QC Limits (Water)
A.	Phenol	40-120%		F.	N-Nitroso-di-n-propylamine	30-110%		K.	Diethylphthalate	50-120%
B.	2-Chlorophenol	50-110%		G.	Hexachloroethane	20-110%		L.	N-nitrosodiphenylamine	30-110%
C.	4-Chloroaniline	10-120%		H.	Isophorone	50-110%		M.	Hexachlorobenzene	40-120%
D.	2,4,6-Trichlorophenol	40-120%		I.	Naphthalene	30-110%		N.	Benzo(a)pyrene	50-120%
E.	Bis(2-chloroethyl)ether	50-110%		J.	2,4-Dinitrotoluene	30-120%		O.		

LDC #: 12710A2
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: B
2nd Reviewer: R

METHOD: GC/MS BNA (EPA CLP SOW OLC~~02.0~~ 03.2)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard
S = Standard deviation of the RRFs, X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (20 std)	Recalculated RRF (20 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL	9/23/04	Phenol	1.206	1.206	1.165	1.165	5.7	5.7
			Naphthalene	1.025	1.025	1.030	1.030	4.1	4.1
			Fluorene	1.191	1.191	1.254	1.254	6.8	6.8
			Pentachlorophenol	0.182	0.182	0.186	0.186	14.0	14.0
			Bis(2-ethylexyl)phthalate	0.721	0.721	0.756	0.756	6.5	6.5
			Benzo(a)pyrene	1.390	1.390	1.417	1.417	9.4	9.4
2									
3									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A2
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: B
2nd Reviewer: R

METHOD: GC/MS BNA (EPA CLP SOW OLC~~02.0~~ 03.2)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (Initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	HG041004A66	10/4/04	Phenol (1st internal standard)	1.165	1.034	1.034	11.2	11.2
			Naphthalene (2nd internal standard)	1.030	0.989	0.989	4.0	4.0
			Fluorene (3rd internal standard)	1.254	1.234	1.234	1.6	1.6
			Pentachlorophenol (4th internal standard)	0.186	0.189	0.189	1.6	1.6
			Bis(2-ethylhexyl)phthalate (5th internal standard)	0.756	0.683	0.683	9.7	9.7
			Benzo(a)pyrene (6th internal standard)	1.417	1.312	1.312	7.4	7.4
2			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					
3			Phenol (1st internal standard)					
			Naphthalene (2nd internal standard)					
			Fluorene (3rd internal standard)					
			Pentachlorophenol (4th internal standard)					
			Bis(2-ethylhexyl)phthalate (5th internal standard)					
			Benzo(a)pyrene (6th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A2
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of
Reviewer:
2nd reviewer:

METHOD: GC/MS Semivolatiles (EPA CLP SOW OLC~~02.0~~ 03.2)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
~~Nitrobenzene-d5~~ Phenol D5	36	27	75	75	0
2-Fluorobiphenyl bis-(2-chloroethyl) ether -d8	↓	29	81	81	↓
Terphenyl-d14 2-chlorophenol d4	↓	26	72	72	↓
Phenol-d5 4-methylphenol	↓	30	83	83	↓
2-Fluorophenol Nitrobenzene-d5	↓	31	86	86	↓
~~2,4,6-Tribromophenol~~ 2-nitrophenol d4	↓	30	83	83	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
~~Nitrobenzene-d5~~ 2,4-Dichlorophenol-d3	36	28	~~83~~ 78	78	0
2-Fluorobiphenyl 4-chloroaniline-d4	↓	28	78	78	↓
Terphenyl-d14 Dimethylphthalate-d6	↓	34	~~78~~ 94	94	↓
Phenol-d5 Acenaphthylene -d8	↓	31	86	86	↓
2-Fluorophenol 4-nitrophenol-d4	↓	30	83	83	↓
~~2,4,6-Tribromophenol~~ Fluorene-d10	↓	33	92	92	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
			Reported	Recalculated	
~~Nitrobenzene-d5~~ 4,6-Dinitro 2-methylphenol-d2	36	27	75	75	0
2-Fluorobiphenyl Anthracene-d10	↓	35	97	97	↓
Terphenyl-d14 Pyrene -d10	↓	37	103	103	↓
Phenol-d5 Benzo(a)pyrene d12	↓	37	103	103	↓
2-Fluorophenol					
~~2,4,6-Tribromophenol~~					

LDC #: 12716A2
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: B
2nd Reviewer: R

METHOD: GC/MS BNA (EPA CLP SOW OLC~~02.0~~ 03.2)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration, SA = Spike added, SC = Sample concentation

RPD = | MS - MSD | * 2/(MS + MSD) MS = Matrix spike percent recovery MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 7 + 8

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	—	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Phenol I	74	73	0.0	69	73	93	93	100	100	7	7
2-Chlorophenol 2	74	73		56	64	76	76	88	88	15	15
~~4-Chloroaniline~~ J	19	18		16	17	84	84	94	94	11	11
~~2,4,6-Trichlorophenol~~ V	74	73		68	74	92	92	101	101	9	9
~~Bis(2-chloroethyl)ether~~ GG	19	18		17	17	89	89	94	94	5	5
~~N-Nitroso-di-n-propylamine~~ II	74	73		71	78	96	96	107	107	11	11
~~Hexachloroethane~~ KK	19	18		16	17	84	84	94	94	11	11
Isophorone TT	74	73		130	140	176	176	192	192	9	9
~~Naphthalene~~ ZZ	19	18		18	19	95	95	106	106	11	11
~~2,4-Dinitrotoluene~~											
~~Diethylphthalate~~											
~~N-Nitrosodiphenylamine~~											
~~Hexachlorobenzene~~											
~~Benzo(a)pyrene~~											

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A2
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

METHOD: GC/MS BNA (EPA ~~SW 846 Method 8270~~) aip SOW OLC03.2

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. #2 . Bis-(2-Ethylhexyl)phthalate

$$\text{Conc.} = \frac{(33197)(20)(1000)(\quad)(\quad)}{(184726)(0.683)(1100)(\quad)(\quad)} = 4.8 \text{ ug/L}$$

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

RECALC.2S

1LCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Contract: OLC03-REVS

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451701 Date Received: 09/29/2004

Sample Volume: 1150(ML) Date Extracted: 10/01/2004

Concentrated Extract Volume: 2000(UL) Date Analyzed: 10/02/2004

Injection Volume: 1.0(UL) Dilution Factor: 1.0

Sulfur Cleanup: (Y/N) N Extraction: (Sepf/Cont) SEPF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-6	alpha-BHC	0.010	U
319-85-7	beta-BHC	0.010	U
319-86-8	delta-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.010	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
60-57-1	Dieldrin	0.020	U
72-55-9	4,4'-DDE	0.020	U
72-20-8	Endrin	0.020	U
33213-65-9	Endosulfan II	0.020	U
72-54-8	4,4'-DDD	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
50-29-3	4,4'-DDT	0.010	J
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.020	U
7421-93-4	Endrin aldehyde	0.020	U
5103-71-9	alpha-Chlordane	0.010	U
5103-74-2	gamma-Chlordane	0.010	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.20	U
11104-28-2	Aroclor-1221	0.40	U
11141-16-5	Aroclor-1232	0.20	U
53469-21-9	Aroclor-1242	0.20	U
12672-29-6	Aroclor-1248	0.20	U
11097-69-1	Aroclor-1254	0.20	U
11096-82-5	Aroclor-1260	0.20	U

1LCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Contract: OLC03-REVS

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451705 Date Received: 09/29/2004

Sample Volume: 1040(ML) Date Extracted: 10/01/2004

Concentrated Extract Volume: 2000(UL) Date Analyzed: 10/02/2004

Injection Volume: 1.0(UL) Dilution Factor: 1.0

Sulfur Cleanup: (Y/N) N Extraction: (Sepf/Cont) SEPF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-6	alpha-BHC	0.010	U
319-85-7	beta-BHC	0.010	U
319-86-8	delta-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.010	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
60-57-1	Dieldrin	0.020	U
72-55-9	4,4'-DDE	0.020	U
72-20-8	Endrin	0.020	U
33213-65-9	Endosulfan II	0.020	U
72-54-8	4,4'-DDD	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
50-29-3	4,4'-DDT	0.020	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.020	U
7421-93-4	Endrin aldehyde	0.020	U
5103-71-9	alpha-Chlordane	0.010	U
5103-74-2	gamma-Chlordane	0.010	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.20	U
11104-28-2	Aroclor-1221	0.40	U
11141-16-5	Aroclor-1232	0.20	U
53469-21-9	Aroclor-1242	0.20	U
12672-29-6	Aroclor-1248	0.20	U
11097-69-1	Aroclor-1254	0.20	U
11096-82-5	Aroclor-1260	0.20	U

1LCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Contract: OLC03-REVS

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451704 Date Received: 09/29/2004

Sample Volume: 1100(ML) Date Extracted: 10/01/2004

Concentrated Extract Volume: 2000(UL) Date Analyzed: 10/02/2004

Injection Volume: 1.0(UL) Dilution Factor: 1.0

Sulfur Cleanup: (Y/N) N Extraction: (Sepf/Cont) SEPF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-6	alpha-BHC	0.010	U
319-85-7	beta-BHC	0.010	U
319-86-8	delta-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.010	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
60-57-1	Dieldrin	0.020	U
72-55-9	4,4'-DDE	0.020	U
72-20-8	Endrin	0.020	U
33213-65-9	Endosulfan II	0.020	U
72-54-8	4,4'-DDD	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
50-29-3	4,4'-DDT	0.020	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.020	U
7421-93-4	Endrin aldehyde	0.020	U
5103-71-9	alpha-Chlordane	0.010	U
5103-74-2	gamma-Chlordane	0.010	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.20	U
11104-28-2	Aroclor-1221	0.40	U
11141-16-5	Aroclor-1232	0.20	U
53469-21-9	Aroclor-1242	0.20	U
12672-29-6	Aroclor-1248	0.20	U
11097-69-1	Aroclor-1254	0.20	U
11096-82-5	Aroclor-1260	0.20	U

1LCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Contract: OLC03-REVS

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451706 Date Received: 09/29/2004

Sample Volume: 1080(ML) Date Extracted: 10/01/2004

Concentrated Extract Volume: 2000(UL) Date Analyzed: 10/02/2004

Injection Volume: 1.0(UL) Dilution Factor: 1.0

Sulfur Cleanup: (Y/N) N Extraction: (Sepf/Cont) SEPF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-6	alpha-BHC	0.010	U
319-85-7	beta-BHC	0.010	U
319-86-8	delta-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.010	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
60-57-1	Dieldrin	0.020	U
72-55-9	4,4'-DDE	0.020	U
72-20-8	Endrin	0.020	U
33213-65-9	Endosulfan II	0.020	U
72-54-8	4,4'-DDD	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
50-29-3	4,4'-DDT	0.020	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.020	U
7421-93-4	Endrin aldehyde	0.020	U
5103-71-9	alpha-Chlordane	0.010	U
5103-74-2	gamma-Chlordane	0.010	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.20	U
11104-28-2	Aroclor-1221	0.40	U
11141-16-5	Aroclor-1232	0.20	U
53469-21-9	Aroclor-1242	0.20	U
12672-29-6	Aroclor-1248	0.20	U
11097-69-1	Aroclor-1254	0.20	U
11096-82-5	Aroclor-1260	0.20	U

1LCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWT-24

Lab Name: COMPUCHEM Contract: OLC03-REVS

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451702 Date Received: 09/29/2004

Sample Volume: 1100(ML) Date Extracted: 10/01/2004

Concentrated Extract Volume: 2000(UL) Date Analyzed: 10/02/2004

Injection Volume: 1.0(UL) Dilution Factor: 1.0

Sulfur Cleanup: (Y/N) N Extraction: (Sepf/Cont) SEPF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-6	alpha-BHC	0.010	U
319-85-7	beta-BHC	0.010	U
319-86-8	delta-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.010	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
60-57-1	Dieldrin	0.020	U
72-55-9	4,4'-DDE	0.020	U
72-20-8	Endrin	0.020	U
33213-65-9	Endosulfan II	0.020	U
72-54-8	4,4'-DDD	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
50-29-3	4,4'-DDT	0.020	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.020	U
7421-93-4	Endrin aldehyde	0.020	U
5103-71-9	alpha-Chlordane	0.010	U
5103-74-2	gamma-Chlordane	0.010	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.20	U
11104-28-2	Aroclor-1221	0.40	U
11141-16-5	Aroclor-1232	0.20	U
53469-21-9	Aroclor-1242	0.20	U
12672-29-6	Aroclor-1248	0.20	U
11097-69-1	Aroclor-1254	0.20	U
11096-82-5	Aroclor-1260	0.20	U

1LCE
LOW CONCENTRATION WATER PESTICIDE ORGANICS ANALYSIS
DATA SHEET

EPA SAMPLE NO.

ACSGWPWZ-24

Lab Name: COMPUCHEM Contract: OLC03-REVS

Lab Code: LIBRTY Case No.: Client No.: SDG No.: 4517

Lab Sample ID: 451703 Date Received: 09/29/2004

Sample Volume: 1100(ML) Date Extracted: 10/01/2004

Concentrated Extract Volume: 2000(UL) Date Analyzed: 10/02/2004

Injection Volume: 1.0(UL) Dilution Factor: 1.0

Sulfur Cleanup: (Y/N) N Extraction: (Sepf/Cont) SEPF

CAS NO.	COMPOUND	CONCENTRATION UNITS: (UG/L)	Q
319-84-6	alpha-BHC	0.010	U
319-85-7	beta-BHC	0.010	U
319-86-8	delta-BHC	0.010	U
58-89-9	gamma-BHC (Lindane)	0.010	U
76-44-8	Heptachlor	0.010	U
309-00-2	Aldrin	0.010	U
1024-57-3	Heptachlor epoxide	0.010	U
959-98-8	Endosulfan I	0.010	U
60-57-1	Dieldrin	0.020	U
72-55-9	4,4'-DDE	0.020	U
72-20-8	Endrin	0.020	U
33213-65-9	Endosulfan II	0.020	U
72-54-8	4,4'-DDD	0.020	U
1031-07-8	Endosulfan sulfate	0.020	U
50-29-3	4,4'-DDT	0.020	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.020	U
7421-93-4	Endrin aldehyde	0.020	U
5103-71-9	alpha-Chlordane	0.010	U
5103-74-2	gamma-Chlordane	0.010	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.20	U
11104-28-2	Aroclor-1221	0.40	U
11141-16-5	Aroclor-1232	0.20	U
53469-21-9	Aroclor-1242	0.20	U
12672-29-6	Aroclor-1248	0.20	U
11097-69-1	Aroclor-1254	0.20	U
11096-82-5	Aroclor-1260	0.20	U

ACS-89
Data Validation Reports
LDC# 12710

Chlorinated Pesticides & PCBs

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 27 through September 28, 2004

LDC Report Date: November 15, 2004

Matrix: Water

Parameters: Chlorinated Pesticides & PCBs

Validation Level: EPA Level IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4517

Sample Identification

ACSGWPWA-24
ACSGWPWT-24
ACSGWPWZ-24
ACSGWPWD-24
ACSGWPWC-24
ACSGWPWDUP-24
ACSGWPWC-24MS
ACSGWPWC-24MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work OLC03.2 for Chlorinated Pesticides and PCBs.

The review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

A Resolution check mixture was analyzed at the beginning of the initial calibration sequence on each GC column. The resolution between adjacent peaks of required compounds was greater than or equal to 60% .

Performance evaluation mixtures (PEM) were analyzed at the proper frequency. The resolution between adjacent peaks was 90% on both GC columns. The absolute retention times for the initial and continuing PEMs were within the calculated retention time windows based on the three-point initial calibration.

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 20.0% and the combined breakdowns were less than or equal to 30.0% .

The relative percent difference (RPD) of amount in PEMs were within 25.0% QC limits.

III. Initial Calibration

Initial calibration sequence was followed as required.

Initial calibration of single and multicomponent compounds was performed for both columns at proper frequencies.

The retention time windows were established according to the method.

The percent relative standard deviations (%RSD) of calibration factors for selected single component compounds were within the 20.0% QC limits and were within the 25.0% QC limits for alpha-BHC and beta-BHC .

All required peaks for multicomponent compounds were present.

IV. Continuing Calibration

Continuing calibration sequence was followed as required. No more than 12 hours elapsed between continuing calibration analyses in an analytical sequence.

The retention times (RT) of all compounds in Individual Mix and multicomponent standards were within QC limits.

The relative percent differences (RPD) of amount in Individual Mix standards were within the 25.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PCB contaminants were found in the method blanks.

Instrument blank analyses were performed at the required frequencies. No chlorinated pesticide or PCB contaminants were found in the instrument blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples, standards and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits of 30-150% .

The retention times for surrogates were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cartridge checks were performed at the required frequency and all compounds were within the 80-120% recovery QC criteria.

b. GPC Calibration

GPC cleanup is not required for water samples and was not performed.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and reported CRQLs were within validation criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples ACSGWPWC-24 and ACSGWPWDUP-24 were identified as field duplicates. No chlorinated pesticides or PCBs were detected in any of the samples.

ACS-89
Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

ACS-89
Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

ACS-89
Chlorinated Pesticides & PCBs - Field Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

LDC #: 12710A3
SDG #: 4517
Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/11/04
Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer:

METHOD: GC Chlorinated Pesticides/PCBs (EPA CLP SOW OLC03.2)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/27 – 9/28/04
II.	GC/ECD Instrument Performance Check	A	
III.	Initial calibration	A	%RSD ≤ 20% except alpha and Delta BHC ≤ 25%
IV.	Continuing calibration	A	% D ≤ 25%
V.	Blanks	A	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	A	
Xb.	GPC Calibration	N	
XI.	Target compound identification	A	
XII.	Compound quantitation and reported CRQLs	A	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	ND	D = 5 + 6
XV.	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

1	ACSGWPWA-24	11	PBLKQN	21		31	
2	ACSGWPWT-24	12		22		32	
3	ACSGWPWZ-24	13		23		33	
4	ACSGWPWD-24	14		24		34	
5	ACSGWPWC-24 D	15		25		35	
6	ACSGWPWDUP-24 D	16		26		36	
7	ACSGWPWC-24MS	17		27		37	
8	ACSGWPWC-24MSD	18		28		38	
9		19		29		39	
10		20		30		40	

LDC #: 12710A3
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer:

CLP SOW OLC03.2

Method: Pesticides/PCBs (EPA ~~SW 846 Method 8081/8082~~)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. GC/ECD instrument performance check				
Was the instrument performance found to be acceptable?	✓			
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%? alpha + delta BHC ≤ 25%	✓			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used? Resolution ≥ 90% in the mid-point	✓			curve fit was not use
Did the initial calibration meet the curve fit acceptance criteria?	✓			
Were the RT windows properly established?	✓			
Resolution check mixture ≥ 60% Were the required standard concentrations analyzed in the initial calibration?	✓			
IV. Continuing calibration				
What type of continuing calibration calculation was performed? ✓ %D or ___ %R	✓			
Were Evaluation mix standards analyzed prior to the initial calibration and sample analysis? 90% Resolution Between 2 adjacent peaks (PEM)	✓			
Were endrin and 4,4'-DDT breakdowns ≤ ~~15~~ 20%.0 for individual breakdown in the Evaluation mix standards? combined ≤ 30%	✓			
Was a continuing calibration analyzed daily?	✓			
Were all percent differences (%D) ≤ ~~15~~ 25%.0 or percent recoveries 85-115%?	✓			
Were all the retention times within the acceptance windows?	✓			
V. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was a method blank analyzed for each matrix and concentration?	✓			
Were extract cleanup blanks analyzed with every batch requiring clean-up?	✓			
Was there contamination in the method blanks or clean-up blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Surrogate spikes				
Were all surrogate %R within the QC limits?	✓			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?			✓	
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?			✓	

LDC #: 12710A3
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?			✓	
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Target compound identification				
Were the retention times of reported detects within the RT windows?	✓			
XI. Compound quantitation/CRQLs				
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions, dry weight factors, and clean-up activities applicable to level IV validation?	✓			
XII. System performance				
System performance was found to be acceptable.	✓			
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XIV. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓	NA		
Target compounds were detected in the field duplicates.		✓		
XV. Field blanks				
Field blanks were identified in this SDG.		✓		
Target compounds were detected in the field blanks.			✓	

VALIDATION FINDINGS WORKSHEET

CLP SOW OLC03.2

METHOD: Pesticide/PCBs (EPA~~SW 846 Method 8081/8082)~~

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:

LDC #: 12710A3
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 15
2nd Reviewer:

METHOD: GC ✓ HPLC ____

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

#	Standard ID	Calibration Date	Compound	Reported CF (MID std) 0.02ng 0.2ng	Recalculated CF (MID std)	Reported Average CF (initial)	Recalculated Average CF (initial)	Reported %RSD	Recalculated %RSD
1	ICAL CLPEST	9/27/04	endosulfan I (0.02ng)	~~416950~~ 543400	543400	542758	542758	6.8	6.8
			methoxychlor (0.2ng)	223170	223170	222910	222910	11.0	11.0
2	CLPEST2		↓	242850	242850	244333	244333	12.1	12.1
			↓	90970	90970	90945	90945	9.7	9.7
3									
4									

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A3
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: [illegible]
2nd Reviewer:

METHOD: GC ✓ HPLC

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	Reported CF/Conc. CCV	Recalculated CF/Conc. CCV	Reported %D	Recalculated %D
1	INDAMWF	10/2/04	endosulfan I	0.020	0.021	0.021	5.0	5.0
	RTCLP	0002	methoxychlor	0.20	0.208	0.208	4.0	4.0
2	CLP2	↓	↓	0.020	0.020	0.020	0	0
				0.20	0.198	0.198	1.0	1.0
3								
4								

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A3
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer: F
2nd reviewer:

METHOD: GC Pesticides/PCBs (EPA ~~SW 846 Method 8081/8082~~) SOW OLC03.2

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: #1

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	CLPEST	0.02	0.017550	88	88	0
Decachlorobiphenyl	↓	↓	0.021301	107	107	0
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene	CLPEST2	0.02	0.01515	78	78	0
Decachlorobiphenyl		↓	0.020720	104	104	0
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Sample ID:

Surrogate	Column	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
Tetrachloro-m-xylene						
Tetrachloro-m-xylene						
Decachlorobiphenyl						
Decachlorobiphenyl						

Notes:

[redacted] #: [redacted]71[redacted]
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: _____

METHOD: GC Pesticides/PCBs (EPA ~~SW 846 Method 8081/8082~~ SOW OLC03.2)

The percent recoveries (%R) and Relative Percent difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Concentration

RPD = I MS - MSD I * 2/(MS + MSD)

MS = Matrix spike percent recovery; MSD = Matrix spike duplicate percent recovery

MS/MSD samples: 7 + 8

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	-	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
gamma-BHC	0.095	0.096	0	0.080	0.073	84	84	76	76	10	10
Heptachlor	↓	↓	↓	0.069	0.066	73	73	69	69	6	6
Aldrin	↓	↓	↓	0.079	0.072	83	83	75	75	10	10
Dieldrin	0.19	0.19	↓	0.17	0.16	89	89	84	84	6	6
Endrin	↓	↓	↓	0.20	0.19	105	105	100	100	5	5
4,4'-DDT	↓	↓	↓	0.17	0.16	89	89	84	84	6	6

Comments: Refer ot Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 12710A3
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification

Reviewer: [illegible]
2nd Reviewer:

CLP SOW OLC03.2

METHOD: GC Pesticides/PCBs (EPA ~~SW 846 Method 8081/8082~~)

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Concentration

RPD = I LCS - LCSD I * 2/(LCS + LCSD)

LCS = Laboratory control sample percent recovery; LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: PLCSQN

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	-	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
Gamma-BHC	0.10	NA	0	0.089	NA	89	89				
Heptachlor	↓		↓	0.084	↓	84	84				
~~Aldrin~~ Dieldrin	0.20	↓	↓	0.17	↓	85	85				
~~Dieldrin~~ 4,4'-DDE	↓	↓	↓	0.17	↓	85	85				
Endrin	↓	↓	↓	0.21	↓	105	105				
~~endosulfan sulfate~~ ~~4,4'-DDT~~	↓	↓	↓	0.18	↓	90	90				
gamma chlordane	0.10	↓	↓	0.099	↓	99	99	NA			

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: [redacted] 27107A3
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JS
2nd Reviewer: _____

METHOD: __ GC __ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #1 Compound Name 4,4'-DDT

Concentration = 2446 ng (2000 ml) / 416950 (1ml) (1150 ml)

= 0.010 ug/L

#	Sample ID	Compound	Reported Concentrations ( )	Recalculated Results Concentrations ( )	Qualifications

Comments: _____

SAMPCALew.wpd

SW846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWPWA-24

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix (soil/water): WATER Lab Sample ID: 451701

Level (low/med): LOW Date Received: 9/29/04

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.7	U		P
7440-36-0	Antimony	1.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	121	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	81400			P
7440-47-3	Chromium	0.90	U		P
7440-48-4	Cobalt	0.50	U		P
7440-50-8	Copper	3.4	B		P
7439-89-6	Iron	1900			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	41800			P
7439-97-6	Mercury	0.64	U		CV
7439-96-5	Manganese	32.2			P
7440-02-0	Nickel	0.60	U		P
7440-09-7	Potassium	1910	B	E	P
7782-49-2	Selenium	2.4	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	21400			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	4.1	U		P
57-12-5	Cyanide	1.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWPWC-24

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix (soil/water): WATER Lab Sample ID: 451705

Level (low/med): LOW Date Received: 9/29/04

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.7	U		P
7440-36-0	Antimony	3.6	B		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	139	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	81900			P
7440-47-3	Chromium	0.90	U		P
7440-48-4	Cobalt	0.50	U		P
7440-50-8	Copper	111			P
7439-89-6	Iron	2200			P
7439-92-1	Lead	20.7			P
7439-95-4	Magnesium	44800			P
7439-97-6	Mercury	0.64	U		CV
7439-96-5	Manganese	31.1			P
7440-02-0	Nickel	0.60	U		P
7440-09-7	Potassium	1950	B	E	P
7782-49-2	Selenium	2.4	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	18300			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	35.4			P
57-12-5	Cyanide	1.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWPWD-24

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix (soil/water): WATER Lab Sample ID: 451704

Level (low/med): LOW Date Received: 9/29/04

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.7	U		P
7440-36-0	Antimony	1.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	137	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	88700			P
7440-47-3	Chromium	0.90	U		P
7440-48-4	Cobalt	0.50	U		P
7440-50-8	Copper	3.2	B		P
7439-89-6	Iron	1890			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	45900			P
7439-97-6	Mercury	0.64	U		CV
7439-96-5	Manganese	30.7			P
7440-02-0	Nickel	0.60	U		P
7440-09-7	Potassium	1890	B	E	P
7782-49-2	Selenium	2.4	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	18400			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	7.2	B		P
57-12-5	Cyanide	1.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

ACSGWPWDUP-24

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix (soil/water): WATER Lab Sample ID: 451706

Level (low/med): LOW Date Received: 9/29/04

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.7	U		P
7440-36-0	Antimony	1.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	139	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	82400			P
7440-47-3	Chromium	0.90	U		P
7440-48-4	Cobalt	0.50	U		P
7440-50-8	Copper	1.8	B		P
7439-89-6	Iron	2160			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	45100			P
7439-97-6	Mercury	0.64	U		CV
7439-96-5	Manganese	30.8			P
7440-02-0	Nickel	0.60	U		P
7440-09-7	Potassium	1930	B	E	P
7782-49-2	Selenium	2.4	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	18200			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	4.1	U		P
57-12-5	Cyanide	1.1	U		AS

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.

ACSGWPWT-24

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix (soil/water): WATER Lab Sample ID: 451702

Level (low/med): LOW Date Received: 9/29/04

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.7	U		P
7440-36-0	Antimony	1.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	139	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	89300			P
7440-47-3	Chromium	0.90	U		P
7440-48-4	Cobalt	0.50	U		P
7440-50-8	Copper	0.60	U		P
7439-89-6	Iron	2330			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	48200			P
7439-97-6	Mercury	0.64	U		CV
7439-96-5	Manganese	32.4			P
7440-02-0	Nickel	0.60	U		P
7440-09-7	Potassium	2110	B	E	P
7782-49-2	Selenium	2.4	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	20600			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	15.3	B		P
57-12-5	Cyanide	1.1	U		AS

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.

ACSGWPWZ-24

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 4517

Matrix (soil/water): WATER Lab Sample ID: 451703

Level (low/med): LOW Date Received: 9/29/04

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.7	U		P
7440-36-0	Antimony	1.9	U		P
7440-38-2	Arsenic	2.1	U		P
7440-39-3	Barium	160	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	84300			P
7440-47-3	Chromium	0.90	U		P
7440-48-4	Cobalt	0.50	U		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	1650			P
7439-92-1	Lead	1.1	U		P
7439-95-4	Magnesium	45800			P
7439-97-6	Mercury	0.64	U		CV
7439-96-5	Manganese	22.8			P
7440-02-0	Nickel	0.60	U		P
7440-09-7	Potassium	2160	B	E	P
7782-49-2	Selenium	2.4	U	N	P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	24200			P
7440-28-0	Thallium	2.8	U		P
7440-62-2	Vanadium	0.60	U		P
7440-66-6	Zinc	4.1	U		P
57-12-5	Cyanide	1.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

ACS-89
Data Validation Reports
LDC# 12710

Metals

LDC Report# 12710A4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 27 through September 28, 2004

LDC Report Date: November 11, 2004

Matrix: Water

Parameters: Metals

Validation Level: EPA Level IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4517

Sample Identification

ACSGWPWA-24
ACSGWPWT-24
ACSGWPWZ-24
ACSGWPWD-24
ACSGWPWC-24
ACSGWPWDUP-24
ACSGWPWC-24MS
ACSGWPWC-24MSD
ACSGWPWC-24DUP

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

This review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Lead	1.299 ug/L	All samples in SDG 4517
ICB/CCB	Antimony Arsenic Beryllium Chromium Copper Iron Lead Silver	3.5 ug/L 2.1 ug/L 0.2 ug/L 4.3 ug/L 0.9 ug/L 52.4 ug/L 1.8 ug/L 1.0 ug/L	All samples in SDG 4517

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
ACSGWPWA-24	Copper Iron	3.4 ug/L 1900 ug/L	3.4UB ug/L 1900B ug/L

Sample	Analyte	Reported Concentration	Modified Final Concentration
ACSGWPWZ-24	Copper Iron	1.3 ug/L 1650 ug/L	1.3UB ug/L 1650B ug/L
ACSGWPWD-24	Copper Iron	3.2 ug/L 1890 ug/L	3.2UB ug/L 1890B ug/L
ACSGWPWC-24	Antimony Copper Iron Lead	3.6 ug/L 111 ug/L 2200 ug/L 20.7 ug/L	3.6UB ug/L 111B ug/L 2200B ug/L 20.7B ug/L
ACSGWPWDUP-24	Copper Iron	1.8 ug/L 2160 ug/L	1.8UB ug/L 2160B ug/L
ACSGWPWT-24	Iron	2330 ug/L	2330B ug/L

No field blanks were identified in this SDG.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
ACSGWPWC-24MS/MSD (All samples in SDG 4517)	Selenium	-	68.9 (75-125)	-	J (all detects) UJ (all non-detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VIII. Internal Standards

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met with the following exceptions:

Diluted Sample	Analyte	%D (Limits)	Associated Samples	Flag	A or P
ACSGWPWC-24L	Potassium	10.1 (≤10)	All samples in SDG 4517	J (all detects)	A

XI. Sample Result Verification

All sample result verifications met validation criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples ACSGWPWC-24 and ACSGWPWDUP-24 were identified as field duplicates. No methane, ethane, or ethene were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	ACSGWPWC-24	ACSGWPWDUP-24	
Antimony	3.6	1.9U	200
Barium	139	139	0
Calcium	81900	82400	1

Compound	Concentration (ug/L)		RPD
	ACSGWPWC-24	ACSGWPWDUP-24	
Copper	111	1.8	194
Iron	2200	2160	2
Lead	20.7	1.1U	200
Magnesium	44800	45100	1
Manganese	31.1	30.8	1
Potassium	1950	1930	1
Sodium	18300	18200	1
Zinc	35.4	4.1U	200

ACS-89
Metals - Data Qualification Summary - SDG 4517

SDG	Sample	Analyte	Flag	A or P	Reason
4517	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWC-24 ACSGWPWDUP-24	Selenium	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)(RPD)
4517	ACSGWPWA-24 ACSGWPWT-24 ACSGWPWZ-24 ACSGWPWD-24 ACSGWPWC-24 ACSGWPWDUP-24	Potassium	J (all detects)	A	ICP serial dilution (%D)

ACS-89
Metals - Laboratory Blank Data Qualification Summary - SDG 4517

SDG	Sample	Analyte	Modified Final Concentration	A or P
4517	ACSGWPWA-24	Copper Iron	3.4UB ug/L 1900B ug/L	A
4517	ACSGWPWZ-24	Copper Iron	1.3UB ug/L 1650B ug/L	A
4517	ACSGWPWD-24	Copper Iron	3.2UB ug/L 1890B ug/L	A
4517	ACSGWPWC-24	Antimony Copper Iron Lead	3.6UB ug/L 111B ug/L 2200B ug/L 20.7B ug/L	A
4517	ACSGWPWDUP-24	Copper Iron	1.8UB ug/L 2160B ug/L	A
4517	ACSGWPWT-24	Iron	2330B ug/L	A

ACS-89
Metals - Field Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

LDC #: 12710A4

SDG #: 4517

Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 11-11-04

Page: 1 of 1

Reviewer: MG

2nd Reviewer: km

METHOD: Metals (EPA SW 846 Method 6010B/7000)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9-27-04 → 9-28-04
II.	Calibration	A	
III.	Blanks	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Matrix Spike Analysis	SW	MS/MSD
VI.	Duplicate Sample Analysis	A	DUP
VII.	Laboratory Control Samples (LCS)	A	LCS
VIII.	Internal Standard (ICP-MS)	N	Not utilized
IX.	Furnace Atomic Absorption QC	N	" "
X.	ICP Serial Dilution	SW	
XI.	Sample Result Verification	A	
XII.	Overall Assessment of Data	A	
XIII.	Field Duplicates	SW	D = 5 + 6
XIV.	Field Blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: all water

1	ACSGWPWA-24	11		21		31	
2	ACSGWPWT-24	12		22		32	
3	ACSGWPWZ-24	13		23		33	
4	ACSGWPWD-24	14		24		34	
5	ACSGWPWC-24	15		25		35	
6	ACSGWPWDUP-24	16		26		36	
7	ACSGWPWC-24MS	17		27		37	
8	ACSGWPWC-24MSD	18		28		38	
9	ACSGWPWC-24DUP	19		29		39	
10	PBW	20		30		40	

Notes:

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: MG
2nd Reviewer: [illegible]

Method: Metals (EPA SW 826 Method 6010/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury and 85-115% for cyanide) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Was a midrange cyanide standard distilled?			✓	
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
IV. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.		✓		
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
V. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			
VI. Furnace Atomic Absorption QC				
If MSA was performed, was the correlation coefficients ≥ 0.995?			✓	
Do all applicable analysies have duplicate injections?			✓	

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: MG
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%?			✓	
Were analytical spike recoveries within the 85-115% QC limits?			✓	
VII. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the IDL?	✓			
Were all percent differences (%Ds) ≤ 10%?		✓		
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
VIII. Internal Standards (EPA SW-846 Method 6020)				
Were all the percent recoveries (%R) within the 30-120% of the intensity of the internal standard in the associated initial calibration?			✓	
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.	✓			
XIII. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Page: 1 of 1
Reviewer: MG
2nd reviewer: MM

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1→6	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
QC 7, 8	↓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
↓ 9	↓	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP Trace	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN⁻,

Comments: Mercury by CVAA if performed

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
PB/ICB/CCB QUALIFIED SAMPLES

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000) Soil preparation factor applied: NA
Sample Concentration units, unless otherwise noted: µg/L Associated Samples: all

					Sample Identification										
Analyte	Maximum PB[a] (mg/Kg)	Maximum PB[a] (ug/L)	Maximum ICB/CCB[a] (ug/L)	Blank Action Limit	1	3	4	5	6	2					
Al															Al
Sb			3.5	17.5				3.6 UB							Sb
As			2.1	10.5											As
Ba															Ba
Be			0.2	1.0											Be
Cd															Cd
Ca															Ca
Cr			4.3	21.5											Cr
Co															Co
Cu			0.9	4.5	3.4 UB	1.3 UB	3.2 UB	111 B	1.8 UB						Cu
Fe			52.4	262.	1900 B	1650 B	1890 B	2200 B	2160 B	2330 B					Fe
Pb		1.299	1.8	9.0				20.7 B							Pb
Mg															Mg
Mn															Mn
Hg															Hg
Ni															Ni
K															K
Se															Se
Ag			1.0	5.0											Ag
Na															Na
Tl															Tl
V															V
Zn															Zn
B															B
Mo															Mo
Sr															Sr

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".

Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

BLNKSMP.4S2

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: MG
2nd Reviewer: MM

METHOD: Trace metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Was a matrix spike analyzed for each matrix in this SDG?

Y (N) N/A Were matrix spike percent recoveries (%R) within the control limits of 75-125? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.

(Y) N N/A Were all duplicate sample relative percent differences (RPD) ≤ 20% for water samples and ≤35% for soil samples?

LEVEL IV ONLY:

(Y) N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	MS/MSD ID	Matrix	Analyte	MS %Recovery	MSD %Recovery	RPD (Limits)	Associated Samples	Qualifications
1	7/8	water	Se		68.9 (75-125)		all	J/UJ/A

Comments:

MSD.4S2

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
ICP Serial Dilution

Page: 1 of 1
Reviewer: MG
2nd Reviewer: MJ

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A If analyte concentrations were > 50X the IDL, was an ICP serial dilution analyzed?
Y N N/A Were ICP serial dilution percent differences (%D) ≤10%?
Y N N/A Is there evidence of negative interference? If yes, professional judgement will be used to qualify the data.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Diluted Sample ID	Matrix	Analyte	%D	Associated Samples	Qualifications
1	5	water	K	10.1 (≤10)	all	J dets / A

Comments:

SDIL4S2

LDC#: 12710A4
SDG#: 4517

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: MG
2nd Reviewer: MM

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Compound	Concentration (ug/L)		RPD	
	5	6		
Antimony	3.6	1.9 U	200	
Barium	139	139	0	
Calcium	81900	82400	1	
Copper	111	1.8	194	
Iron	2200	2160	2	
Lead	20.7	1.1 U	200	
Magnesium	44800	45100	1	
Manganese	31.1	30.8	1	
Potassium	1950	1930	1	
Sodium	18300	18200	1	
Zinc	35.4	4.1 U	200	

V:\FIELD DUPLICATES\FD_inorganic\12710A4.wpd

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found / True x 100 Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
1239 ICV	ICP (Initial calibration)	Ni	487.4	492.0	99.1	99.1	Y
	GFAA (Initial calibration)						
1118 ICV	CVAA (Initial calibration)	Hg	4.001	4.100	97.6	97.6	
0613 CCV	ICP (Continuing calibration)	Cr	990.7	1000.0	99.1	~~102.4~~ 99.1	
	GFAA (Continuing calibration)						
1520 CCV	CVAA (Continuing calibration)	Hg	5.119	5.000	102.4	102.4	
	Cyanide (Initial calibration)						
	Cyanide (Continuing calibation)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CALCLC.4SW

LDC #: 2710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$ Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
1319 ICSAB	ICP interference check	Sb	611.4 (µg/L)	585 (µg/L)	104.5	104.5	Y
0545 LCS	Laboratory control sample	As	908.9 (µg/L)	1000 (µg/L)	90.9	90.9	↓
0627 8	Matrix spike	Se	(SSR-SR) 6.89 (µg/L)	10.00 (µg/L)	68.9	68.9	↓
0552/0589 9	Duplicate	Cu	111.0 (µg/L)	113.3 (µg/L)	2.0	2.0	↓
0552/0634 5	ICP serial dilution	K	1950.2 (µg/L)	1752.5 (µg/L)	10.1	10.1	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.4SW

LDC #: 12710A4
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MG
2nd reviewer: [illegible]

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Have results been reported and calculated correctly?
(Y) N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
(Y) N N/A Are all detection limits below the CRDL?

Detected analyte results for #5, Sb were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)(\%S)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor
%S = Decimal percent solids

Recalculation:

$$\frac{(3.583498\ \mu g/L)(0.050\ L)(1)}{0.050\ L} = 3.58\ \mu g/L$$

Sample ID	Analyte	Reported Concentration (µg/L)	Calculated Concentration (µg/L)	Acceptable (Y/N)
5	Sb	3.6	3.6	Y
	Ba	139	139	
	Ca	81900	81900	
	Cu	111	111	
	Fe	2200	2200	
	Pb	20.7	20.7	
	Mg	44800	44800	
	Mn	31.1	31.1	
	K	1950	1950	
	Na	18300	18300	
	Zn	35.4	35.4	

RECALC.4S2

ACS-89
Data Validation Reports
LDC# 12710

Cyanide

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: ACS-89

Collection Date: September 27 through September 28, 2004

LDC Report Date: November 15, 2004

Matrix: Water

Parameters: Cyanide

Validation Level: EPA Level IV

Laboratory: CompuChem

Sample Delivery Group (SDG): 4517

Sample Identification

ACSGWPWA-24
ACSGWPWT-24
ACSGWPWZ-24
ACSGWPWD-24
ACSGWPWC-24
ACSGWPWDUP-24
ACSGWPWC-24MS
ACSGWPWC-24MSD
ACSGWPWC-24DUP

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 9010B/9012A for Cyanide.

This review follows the Remedial Design/Remedial Action PRP - Lead Project Quality Assurance Project Plan (November 2001, Rev. 0) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

B Compound or analyte was positively detected in a sample and in an associated blank.

UB Compound or analyte is not detected at or above the indicated concentration due to blank contamination.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration were met.

b. Calibration verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No cyanide was found in the method blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Cyanide	4.6 ug/L	All samples in SDG 4517

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks

No field blanks were identified in this SDG.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VI. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VII. Sample Result Verification

All sample result verifications were within validation criteria.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

IX. Field Duplicates

Samples ACSGWPWC-24 and ACSGWPWDUP-24 were identified as field duplicates. No cyanide was detected in any of the samples.

ACS-89
Cyanide - Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

ACS-89
Cyanide - Laboratory Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

ACS-89
Cyanide - Field Blank Data Qualification Summary - SDG 4517

No Sample Data Qualified in this SDG

LDC #: 12710A6
SDG #: 4517
Laboratory: CompuChem

VALIDATION COMPLETENESS WORKSHEET

Level ~~III~~ IV

Date: 11-11-04
Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Cyanide (EPA SW846 Method ~~9010B~~ ~~9012A~~)
mH ok 9010B/9012A

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9-27-04 → 9-28-04
IIa.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks mH	~~SW~~ A	SW
IV	Matrix Spike/Matrix Spike Duplicates	A	MS/MSD
V	Duplicates	A	DUP
VI.	Laboratory control samples	A	LCS
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	ND	D = 5+6
X	Field blanks	N	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
all water

1	ACSGWPWA-24	11		21		31	
2	ACSGWPWT-24	12		22		32	
3	ACSGWPWZ-24	13		23		33	
4	ACSGWPWD-24	14		24		34	
5	ACSGWPWC-24	15		25		35	
6	ACSGWPWDUP-24	16		26		36	
7	ACSGWPWC-24MS	17		27		37	
8	ACSGWPWC-24MSD	18		28		38	
9	ACSGWPWC-24DUP	19		29		39	
10	PBW	20		30		40	

Notes:

LDC #: 12710A6
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: MG
2nd Reviewer: LM

Method: Inorganics (EPA Method ~~9012A~~ 9010B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	✓			
Were titrant checks performed as required?			✓	
Were balance checks performed as required?			✓	
~~Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?~~	~~✓~~			
III. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	✓			
IV. Matrix spike/Matrix spike duplicates and Duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.	✓			
V. Laboratory control samples				
Was an LCS anayized for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	✓			
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		✓		
Were the performance evaluation (PE) samples within the acceptance limits?			✓	

LDC #: 12710A6
SDG #: 4517

VALIDATION FINDINGS CHECKLIST

Reviewer: MG
2nd Reviewer: M

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
Were detection limits < RL?	✓			
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
IX. Field duplicates				
Field duplicate pairs were identified in this SDG.	✓			
Target analytes were detected in the field duplicates.		✓		
X. Field blanks				
Field blanks were identified in this SDG.		✓		
Target analytes were detected in the field blanks.			✓	

LDC #: 12710A6
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Blanks

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Inorganics, Method ~~9012A~~ 9010B [illegible]

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
(Y) N N/A Were all samples associated with a given method blank?
(Y) N N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: µg/L **Associated Samples:** all

Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit	Sample Identification								
				—	—	No samples	were	qualified	—			
CN		~~5.2~~	~~26.0~~									
		4.6	23.0									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #: 12710A6
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Inorganics, Method 9010B

The correlation coefficient (r) for the calibration of CN was recalculated. Calibration date: 10-11-04

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found / True x 100 Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

Type of Analysis	Analyte		Conc (units)	Area (units)	Recalculated r or %R	Reported r or %R	Acceptable (Y/N)
Initial calibration	CN	Blank	0 (µg/L)	101590	r = 0.9998	r = 0.9998	Y
Calibration verification		Standard 1	10 ( )	371067			
		Standard 2	20 ( )	658128			
		Standard 3	40 ( )	1229429			
		Standard 4	100 ( )	2879010			
		Standard 5	200 ( )	5514399			
		Standard 6	300 ( )	8237544			
		Standard 7	400 ( )	10612093			
Calibration verification	CN	CCV2	187.31 (µg/L)	200.0 (µg/L)	93.7	93.7	
Calibration verification	—	—	—	—	—	—	—
Calibration verification	—	—	—	—	—	—	—

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CALCLC.6

LDC #: 12710A6
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

METHOD: Inorganics, Method 9010B

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
LCS	Laboratory control sample	CN	96.2 (µg/L)	99.0 (µg/L)	97.2	97.2	Y
7	Matrix spike sample	CN	(SSR-SR) 94.92 (µg/L)	100.00 (µg/L)	94.9	94.9	↓
9	Duplicate sample	CN	1.1 U (µg/L)	1.24 (µg/L)	200.0	200.0	↓

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 12710A6
SDG #: 4517

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: MG
2nd reviewer: M

METHOD: Inorganics, Method ~~9010A~~ 9010B

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for all samples = N.D. ~~reported with a positive detect were recalculated and verified using the following equation~~:

Concentration = Recalculation:

#	Sample ID	Analyte	Reported Concentration ( )	Calculated Concentration ( )	Acceptable (Y/N)

Note:

RECALC.6

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

LDC #12710
November 16, 2004

MWH Americas, Inc.
175 West Jackson Blvd, Suite 1900
Chicago, IL 60604-2814
ATTN: Mr. Chad Smith

SUBJECT: ACS Residential Wells, Data Validation

Dear Mr. Smith,

SUBJECT: Precision, Accuracy, Representativeness, Comparability, Completeness (PARCC) Summary Report for the ACS Residential Wells Project

Enclosed is the Precision, Accuracy, Representativeness, Comparability, Completeness (PARCC) Summary Report for the ACS Residential Wells project.

We appreciate this opportunity to support MWH Americas, Ic. in the performance of this project. Please feel free to call me at (760) 634-0437 if you have any questions.

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

V:\LOGIN\MWH\ACS\12710COVP.wpd

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS SUMMARY REPORT

American Chemical Service

11/16/04

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Glossary

CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
DQO	Data Quality Objectives
IDL	Instrument Detection Limit
LCS/LCSD	Laboratory Control Sample / Laboratory Control Sample Duplicate
mg/Kg	Milligrams per Kilogram
MS/MSD	Matrix Spike / Matrix Spike Duplicate
PARCC	Precision,Accuracy,Representativeness,Comparability, Completeness
PCBs	Polychlorinated Biphenyls
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
RRF	Relative Response Factor
RL	Reporting Limit
SDG	Sample Delivery Group
SVOC	Semivolatile Organic Compound
ug/Kg	Micrograms per Kilogram
ug/L	Micrograms per Liter
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound
%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation

PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS SUMMARY REPORT
American Chemical Service

1.0 INTRODUCTION

Remedial design/ remedial action was conducted at the American Chemical Service, Inc. NPL Site in Griffith, Indiana. This part of the site investigation included the collection and analyses of 5 groundwater residential wells and quality control (QC) samples. The analyses were performed by the following methods:

Volatile Organics by EPA SW 846 Method 8260B
Semivolatile Organics by EPA CLP SOW OLC03.2
Chlorinated Pesticides and PCBs by EPA CLP SOW OLM03.2
Metals by EPA SW 846 Method 6010B/7470
Cyanide by EPA SW 8046 Method 9010B

Analytical services were provided by Compuchem who performed analyses on the groundwater samples. The samples were grouped into sample delivery groups (SDGs) of up to 20 field samples received by the laboratory. The environmental samples are associated with QA/QC samples designed to document the data quality of the entire SDG or a sub-group of samples within an SDG. Table I in Appendix A is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, and matrix. All shaded samples in Table I in Appendix A were reviewed under EPA Level 4 guidelines.

Approximately ten percent of the analytical data were validated according to EPA Level 4 data validation procedures and ninety percent of the analytical data were validated according to EPA Level 3 data validation procedures. The analytical data were evaluated for quality assurance and quality control (QA/QC) based on the following documents: *The Remedial Design/ Remedial Action PRP-Lead Project at the American Chemical Service, Inc. NPL Site, Griffith, Indiana Quality Assurance Project Plan,* November 2001, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994, and the *EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste.*

This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, and comparability (PARCC) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The PARCC summary report evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each of the PARCC criteria. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 8 presents a summary of the PARCC criteria by comparing quantitative parameters with acceptability criteria defined in the project DQO's. Qualitative PARCC criteria are also summarized in this section.

Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and

laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors in sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given media.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: trip blanks, equipment rinsate blanks, field duplicates, method blanks, laboratory control samples (LCSs), surrogate spikes, matrix spike/matrix spike duplicates (MS/MSDs), and laboratory duplicates.

Before conducting the PARCC evaluation, the analytical data were validated according to the *Remedial Design/ Remedial Action PRP-Lead Project at the American Chemical Service, Inc. NPL Site, Griffith, Indiana Quality Assurance Project Plan,* November 2001, and the Functional Guidelines for Organic Data Review (USEPA 1999) and Inorganic Data Review (USEPA, 1994) and EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste. Samples not meeting the project procedures manual and the Functional Guideline acceptance criteria were qualified with a flag, an abbreviation indicating a deficiency with the data. The following are flags used in data validation.

J — Estimated The associated numerical value is an estimated quantity. The analyte was detected but the reported value may not be accurate or precise. The "J" qualification indicates the data fell outside the QC limits, but the exceedance was not sufficient to cause rejection of the data.

R — Rejected The data is unusable (the compound or analyte may or may not be present). Use of the "R" qualifier indicates a significant variance from functional guideline acceptance criteria. Either resampling or reanalysis is necessary to determine the presence or absence of the rejected analyte.

UB — Analyte was not detected at or above the indicated concentration due to blank contamination. The "UB" flag is used to qualify any result detected in an environmental sample at a concentration less than 10 times the value of the concentration in any associated blank for common laboratory contaminants and less than 5 times the concentration in any associated blank for all other contaminants

B — Analyte was positively detected in a sample and in an associated blank. The "B" flag is used to to qualify any result detected in an environmental sample at a concentration greater than 10 times the value of the concentration in any associated blank for common laboratory contaminants and greater than 5 times the concentration in any associated blank for all other contaminants

UJ — Estimated/Nondetected Analyses were performed for the compound or analyte, but it was not detected and the sample quantitation or detection limit is an estimated quantity due to poor accuracy or precision. This qualification is also used to flag possible false negative results in the case where low bias in the analytical system is indicated by low calibration response, surrogate, internal standard, or other spike recovery.

Once the data are reviewed and qualified according to the *Remedial Design/ Remedial Action PRP-Lead Project at the American Chemical Service, Inc. NPL Site, Griffith, Indiana Quality Assurance Project*

Plan, November 2001 and the functional guidelines, the data set is then evaluated using PARCC criteria. PARCC criteria provide an evaluation of overall data usability. The following is a discussion of PARCC criteria as related to the project DQOs.

Precision is a measure of the agreement or reproducibility of analytical results under a given set of conditions. It is a quantity that cannot be measured directly but is calculated from percent recovery data. Precision is expressed as the relative percent difference (RPD):

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

Where D1 and D2 are the reported concentrations for sample and duplicate analyses. Precision is primarily assessed by calculating an RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD result as the evaluation criteria.

MS and MSD samples are field samples spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the overall efficiency of the analytical method in recovering target analytes from an environmental matrix. A LCS is similar to an MS/MSD sample in that the LCS is spiked with the same target analytes prior to preparation and analysis. However, the LCS is prepared using a controlled interference-free matrix instead of a field sample aliquot. Laboratory reagent water is used to prepare aqueous LCS. Non-aqueous LCSs are prepared using solid media approved by the American Society for Testing and Materials (ASTM) for their homogeneity. The LCS measures laboratory efficiency in recovering target analytes from either a solid or aqueous matrix in the absence of matrix interferences.

For inorganics analysis, one primary sample is analyzed and accompanied by an unspiked laboratory duplicate. The data reviewer compares the reported results of the primary analysis and the laboratory duplicate, then calculates RPDs, which are used to assess laboratory precision.

Laboratory and field sampling precision are further evaluated by calculating RPDs for aqueous field sample duplicate pairs. The sampler collects two field samples at the same location and under identically controlled conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the numerical QC limit in either MS/MSD samples or LCS/LCSD indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. Thus, the actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate pairs, results maybe reported in either the primary or duplicate samples at levels below the reporting limit or non-detected. Since these values are considered to be estimates, RPD exceedances from these duplicate pairs do not suggest a significant impact on the data quality.

Accuracy is a measure of the agreement of an experimental determination and the true value of the parameter being measured. It is used to identify bias in a given measurement system.

Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of MS, MSD, LCS, and samples containing surrogate spikes. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Surrogate spikes are either isotopically labeled compounds or compounds that are not typically detected in the samples. Surrogate spikes are added to every blank, environmental sample, MS/MSD, and standard, for volatile organic (VOC), semivolatile (SVOC), chlorinated pesticides and polychlorinated biphenyl (PCBs) analyses. Accuracy of inorganic analyses is determined using the percent recoveries of MS and LCS analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples, LCS, and surrogate compounds added to environmental samples is evaluated with the acceptance criteria specified by the previously noted documents. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blank samples and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, equipment rinsate blanks, and trip blanks.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Trip blanks are used to identify possible volatile organic contamination introduced into the sample during transport. A trip blank is a sample bottle filled in the laboratory with reagent-grade water and preserved to a pH less than 2 with hydrochloric acid. It is transported to the site, stored with the sample containers, and returned unopened to the laboratory for analysis. Additionally, for inorganic analyses, initial and continuing calibration blanks consist of acidified laboratory grade water, which are injected at the beginning and at a regular frequency during each 12 - hour sample analysis run. These blanks estimate residual contaminants from the previous sample or standards analysis and measure baseline shifts that commonly occur in emission and absorption spectroscopy.

Contaminants found in both the environmental sample and a blank sample are assumed to be laboratory artifacts if the concentration in the environmental sample is less than 10 times the

blank value for common laboratory contaminants; methylene chloride, acetone, 2-butanone, and phthalate esters or 5 times the blank value for other laboratory contaminants.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedances can cause loss of sample constituents due to biodegradation, precipitation, volatization, and chemical degradation.

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability is also dependent upon other PARCC criteria, because only when precision, accuracy, and representativeness are known can data sets be compared with confidence.

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 95 percent.

Percent completeness is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

where:
%C = percent completeness
T = total number of sample results
R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the FSP or QAPP, with the number determined above.

The following sections present a review of QC data for each analytical method.

2.0 VOLATILE ORGANIC COMPOUNDS

A total of seven water samples were analyzed for volatile organic compounds (VOC) by EPA SW 846 Method 8260B. All volatile data were assessed to be valid since none of the 350 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

2.1 Precision and Accuracy

2.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Relative response factor (RRF), percent relative standard deviation (%RSD),

and percent difference (%D) are the three major parameters used to measure the effectiveness of instrument calibration. RRF is a measure of the relative spectral response of an analyte compared to its internal standard. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The relative response factors for these compounds were above the criteria for acceptance of 0.05 in the initial calibration and/or the continuing calibration standards

Thirty five VOC results were qualified detected estimated (J) and non-detected estimated (UJ). The percent difference between the initial calibration mean relative response factors and the continuing calibration relative response factors for chloromethane, bromomethane, methyl acetate,trans-1,2-dichloroethene and 2-hexanone were outside the acceptance criteria of 25 percent. The affected samples are identified in the data validation reports.

2.1.2 Surrogates

Three hundred fifty VOC results were qualified detected estimated (J) and non-detected estimated (UJ). The surrogate percent recovery for bromoflourobenzene, 1,2-dichloroethane-d4 and toluene-d8 were outside the acceptance criteria. The details regarding the qualification of results are provided in the data validation reports.

2.1.3 MS/MSD Samples

No data were qualified based on MS/MSD nonconformances. For those SDGs with MS/MSD results, the recoveries were evaluated against the acceptance criteria.

2.1.4 LCS Samples

No data were qualified based on LCS nonconformances. For those SDGs with LCS results, the recoveries were evaluated against the acceptance criteria.

2.1.5 Internal Standards

No data were qualified based on internal standard nonconformances. The recoveries and retention times were evaluated against the acceptance criteria.

2.1.6 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

2.1.7 Compound Quantitation and Target Identification

All compound quantitation and target identification was found to be acceptable.

2.2 Representativeness

2.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

2.2.2 Blanks

Method blanks and trip blanks were collected and analyzed to evaluate representativeness. The concentration for an individual target compounds in any of the three types of QA/QC blanks were used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results for organic compounds based on the following criteria. The validation qualifier codes used in the blank summary tables are described below.

> Results Below the RL If a sample result for the blank contaminant was less than the RL and less than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the sample result was amended as a non-detected at the RL for the target compound and qualified with UB
>
> Results Above the RL If a sample result for the blank contaminant was greater than the sample RL and less than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the sample result for the blank contaminant was amended as a non-detect at the concentration reported in the sample results and qualified with UB.
>
> If a sample result for the blank contaminant was greater than 10 times the blank value for common contaminants or 5 times the blank value for other contaminants, the result was not amended and qualified with B.

2.2.2.1 Method Blanks

No QC issues were associated with the method blanks for this analysis.

2.2.2.2 Trip Blanks

As a result of trip blank contamination, two methylene chloride, one dibromochloromethane and bromoform results were qualified as non-detected (UB). The details regarding the qualification of results are provided in the data validation reports.

2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target compounds detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

2.4 Completeness

The completeness level attained for volatile organic field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

3.0 SEMIVOLATILE ORGANIC COMPOUNDS

A total of six water samples were analyzed for semivolatile organic compounds (SVOC) by EPA CLP SOW OLC03.2. All semivolatile data were assessed to be valid since none of the 390 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

3.1 Precision and Accuracy

3.1.1 Instrument Calibration

As previously discussed in Section 2.1.1, initial and continuing calibration results provide a means of evaluating accuracy.

The relative response factors met the acceptance criteria of 0.05 in the initial and continuing calibration standards.

Twenty six semivolatile results were qualified as detected estimated (J) and non-detected estimated (UJ). The relative standard deviation in the initial calibrations and/or percent difference between the initial calibration mean relative response factors and the continuing calibration relative response factors for atrazine, benzaldehyde, 2,4-dinitrophenol, 3,3'-dichlorobenzidine and 2,2'-oxybis(1-chloropropane) were outside the acceptance criteria of 30 and 25 percent, respectively. The affected samples are identified in the data validation reports.

3.1.2 Surrogates

No data were qualified based on surrogate recovery nonconformances. In cases where individual recoveries exceeded criteria, the QC exceedance was judged to have no impact on the data quality and no qualifications were made.

3.1.3 MS/MSD Samples

No data were qualified based on MS/MSD nonconformances. For those SDGs with MS/MSD results, the recoveries were evaluated against the acceptance criteria.

3.1.4 LCS Samples

No data were qualified based on LCS nonconformances. For those SDGs with LCS results, the recoveries were evaluated against the acceptance criteria.

3.1.5 Internal Standards

No data were qualified based on internal standard nonconformances. The recoveries and retention times were evaluated against the acceptance criteria.

3.1.6 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

3.1.8 Compound Quantitation and Target Identification

All compound quantitation and target compound identifications were found to be acceptable.

3.2 Representativeness

3.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

3.2.2 Blanks

As previously discussed in Section 2.2.2, method blanks, equipment rinsate blanks, and field blanks were analyzed to evaluate representativeness.

3.2.2.1 Method Blanks

No QC issues were associated with the method blanks for this analysis.

3.2.2.2 Equipment Rinsate and Field Blanks

No equipment rinsate and field blanks were associated with this group of samples for this analysis.

3.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target compounds detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

3.4 Completeness

The completeness level attained for semivolatile organic field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

4.0 Chlorinated Pesticides / PCBs

A total of six water samples were analyzed for chlorinated pesticides / PCBs by EPA CLP SOW OLM03.2. All chlorinated pesticides / PCB data were assessed to be valid since none of the 168 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

4.1 Precision and Accuracy

4.1.1 Instrument Calibration

Initial and continuing calibration results provide a means of evaluating accuracy within a particular SDG. Percent relative standard deviation (%RSD) and percent difference (%D) are the two major parameters used to measure the effectiveness of instrument calibration. %RSD is an expression of the linearity of instrument response. %D is a comparison of a continuing calibration instrumental response with its initial response. %RSD and %D exceedances suggest more routine instrumental anomalies, which typically impact all sample results for the affected compounds.

The relative standard deviations in the initial calibrations and/or percent differences between the initial calibration and the continuing calibration concentrations were within the acceptance criteria of 20 and 15 percent respectively.

4.1.2 Surrogates

No data were qualified based on surrogate recovery nonconformances. In cases where individual recoveries exceeded criteria, the QC exceedance was judged to have no impact on the data quality and no qualifications were made.

4.1.3 MS/MSD Samples

No data were qualified based on MS/MSD nonconformances. For those SDGs with MS/MSD results, the recoveries were evaluated against the acceptance criteria.

4.1.4 LCS Samples

No data were qualified based on LCS nonconformances. For those SDGs with LCS results, the recoveries were evaluated against the acceptance criteria.

4.1.6 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the compounds. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

4.1.8 Compound Quantitation and Target Identification

All target compounds identifications were found to be acceptable

4.2 Representativeness

4.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

4.2.2 Blanks

As previously discussed in Section 2.2.2, method blanks were analyzed to evaluate representativeness.

4.2.2.1 Method Blanks

No QC issues were associated with the method blanks for this analysis.

4.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target compounds detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

4.4 Completeness

The completeness level attained for chlorinated pesticides / PCBs field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

5.0 METALS

A total of six water samples were analyzed for metals by EPA SW 846 Method 6010B/7470. All metals data were assessed to be valid since none of the 144 total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

5.1 Precision and Accuracy

5.1.1 Instrument Calibration

Initial and continuing calibration verification results provide a means of evaluating accuracy within a particular SDG. Correlation coefficient (r) and percent recovery (%R) are the two major parameters used to measure the effectiveness of instrument calibration. The correlation coefficient indicates the linearity of the calibration curve. %R is used to verify the on going calibration acceptability of the analytical system. The most critical of the two calibration parameters, r, has the potential to affect data accuracy across an SDG when it is outside the acceptable QC limits. %R exceedances suggest more routine instrumental anomalies, which typically impact all sample results for the affected analytes.

The correlation coefficients in the initial calibrations and/or percent recoveries in the continuing calibration verifications were within the acceptance criteria of $\geq$ 0.995 and 90-110 percent, respectively.

5.1.2 MS Samples

As a result of non-compliant MS recoveries, six results for selenium were qualified as detected estimated (J) and non-detected estimated (UJ). The details regarding the qualification of results are provided in the data validation reports.

5.1.3 Duplicate (DUP) Samples

No data were qualified based on duplicate nonconformances. For those SDGs with DUP results, the relative percent differences/differences were evaluated against the acceptance criteria. In cases where RPDs or differences exceeded criteria, the QC exceedance was judged to have no impact on the data quality and no qualifications were made.

5.1.4 LCS Samples

No data were qualified based on LCS nonconformances. For those SDGs with LCS results, the recoveries were evaluated against the acceptance criteria.

5.1.5 ICP Serial Dilution

As a result of ICP serial dilution exceedances, six results for potassium were qualified as detected estimated (J). The details regarding the qualification of results are provided in the data validation reports.

5.1.6 ICP Interference Check Sample

No data were qualified based on interference check sample nonconformances. All recoveries were evaluated against the acceptance criteria.

5.1.7 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the analytes. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

5.1.9 Sample Result Verification

All sample results were found to be acceptable.

5.2 Representativeness

5.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

5.2.2 Blanks

Method blanks and field blanks were collected and analyzed to evaluate representativeness. The concentration for an individual target compounds in any of the three types of QA/QC blanks were used for data qualification.

If contaminants were detected in a blank, corrective actions were made for the chemical analytical data during data validation. The corrective action consisted of amending the laboratory reported results for inorganic analytes based on the following criteria. The validation qualifier codes are described below.

Results Above and Below the RL If a sample result for the blank contaminant was less than or greater than the RL and less than 5 times the blank value, the sample result was amended as a non-detected for the target compound and qualified with UB

If a sample result for the blank contaminant was greater than 5 times the blank value, the result was not amended and qualified with B.

5.2.2.1 Method Blanks

As a result of method blank contamination, several analytes were qualified as non-detected estimated (UB) and detected estimated (B). The details regarding the qualification of results are provided in the data validation reports.

5.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target analytes detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

5.4 Completeness

The completeness level attained for metal field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

6.0 Cyanide

A total of six water samples were analyzed for cyanide by EPA SW 846 Method 9010A. All cyanide data were assessed to be valid since none of the six total results were rejected based on QC exceedances. This section discusses the QA/QC supporting documentation as defined by the PARCC criteria and evaluated based on the DQOs.

6.1 Precision and Accuracy

6.1.1 Instrument Calibration

As previously discussed in Section 5.1.1, initial and continuing calibration results provide a means of evaluating accuracy.

The correlation coefficients in the initial calibrations and/or percent recoveries in the continuing calibration verifications were within the acceptance criteria of ≥ 0.995 and 90-110 percent, respectively.

6.1.2 MS Samples

No data were qualified based on MS nonconformances. For those SDGs with MS results, the recoveries were evaluated against the acceptance criteria.

6.1.3 Duplicate (DUP) Samples

No data were qualified based on duplicate nonconformances. For those SDGs with duplicate results, the recoveries were evaluated against the acceptance criteria.

6.1.4 LCS Samples

No data were qualified based on LCS nonconformances. For those SDGs with LCS results, the recoveries were evaluated against the acceptance criteria.

6.1.7 Field Duplicate Samples

The field duplicate samples were evaluated for acceptable precision with RPDs for the analytes. The associated data validation narratives provided details regarding criteria exceeded. Sample data were not qualified on the basis of field duplicate precision.

6.1.9 Sample Result Verification

All sample results were found to be acceptable.

6.2 Representativeness

6.2.1 Holding Times

The evaluation of holding times to verify compliance with the method was conducted. All holding times were met.

6.2.2 Blanks

As previously discussed in Section 5.2.2, method blanks were analyzed to evaluate representativeness.

6.2.2.1 Method Blanks

No QC issues were associated with the method blanks for this analysis.

6.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the method detection limits attained were at or below the reporting limit. Target analytes detected below the reporting limits flagged (J) by the laboratory should be considered estimated. The comparability of the data is regarded as acceptable.

6.4 Completeness

The completeness level attained for cyanide field samples was 100 percent. This percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100.

7.0 VARIANCES IN ANALYTICAL PERFORMANCE

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted according to the laboratory SOW.

8.0 SUMMARY OF PARCC CRITERIA

The validation reports present the PARCC results for all SDGs. Each PARCC criterion is discussed in detail in the following sections.

8.1 Precision and Accuracy

Precision and accuracy were evaluated usi`ng data quality indicators such as MS/MSD, LCS, and surrogates. The precision and accuracy of the data set were considered acceptable after integration of qualification of estimated results as specifically noted in the data validation reports.

8.2 Representativeness

All samples for each method and matrix were evaluated for holding time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable after qualification for blank contamination.

8.3 Comparability

Sampling frequency requirements were met in obtaining duplicates and necessary field blanks. The laboratory used standard analytical methods for their analyses. The analytical results were reported in correct standard units. Holding times, sample preservation, and sample integrity were within QC criteria. The overall comparability is considered acceptable.

8.4 Completeness

Of the 1058 total analytes reported, none of the sample results were rejected. The completeness for all SDGs is as follows:

Parameter/Method	Total Analytes	No. of Rejects	%Completeness
Volatiles	350	0	100
Semivolatiles	390	0	100
Chlorinated Pesticides & PCBs	168	0	100
Metals	144	0	100
Cyanide	6	0	100
Total	**1058**	**0**	**100**

The completeness percentage based on rejected data met the 95 percent DQO goal. A less quantifiable loss of data occurred in the application of blank qualifications.

Appendix D

MWH

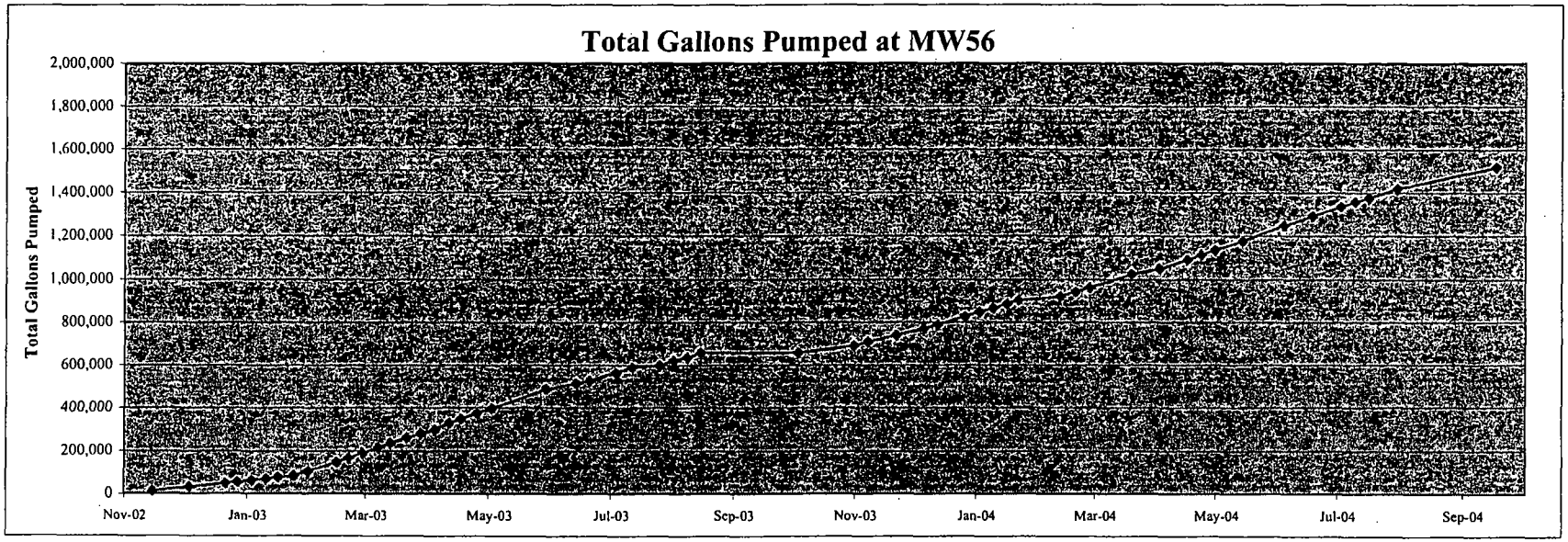
Pumping Data for Lower Aquifer Monitoring Well MW56
Through September 2004

MW56				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
11/15/02	1	10,620	---	---
12/03/02	1	31,620	18	1,167
12/21/02	1.5	50,130	18	1,028
12/27/02	1.5	54,870	6	790
01/03/03	1.5	63,460	7	1,227
01/10/03	1.5	70,130	7	953
01/16/03	1.5	77,380	6	1,208
01/24/03	1.5	84,840	8	933
01/31/03	2	105,400	7	2,937
02/14/03	2	147,310	14	2,994
02/20/03	2	166,550	6	3,207
02/27/03	2	190,130	7	3,369
03/07/03	2	215,980	8	3,231
03/13/03	2	236,440	6	3,410
03/21/03	2	261,380	8	3,118
03/28/03	2	279,930	7	2,650
04/04/03	2	299,360	7	2,776
04/11/03	2	327,490	7	4,019
04/17/03	2	348,540	6	3,508
04/25/03	2	373,590	8	3,131
05/02/03	2	395,770	7	3,169
05/29/03	2	486,640	27	3,366
06/13/03	2	514,120	15	1,832
06/20/03	2	526,930	7	1,830
07/03/03	2	565,650	13	2,978
07/11/03	2	589,150	8	2,938
07/25/03	2	598,780	14	688

MW56				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
08/01/03	2	620,210	7	3,061
08/08/03	2	636,400	7	2,313
08/15/03	2	657,820	7	3,060
10/03/03	2	657,850	49	1
10/31/03	2	690,420	28	1,163
11/07/03	2	709,130	7	2,673
11/21/03	2	738,920	14	2,128
12/05/03	2	770,530	14	2,258
12/12/03	2	787,800	7	2,467
12/26/03	2	827,060	14	2,804
01/02/04	2	846,960	7	2,843
01/09/04	2	866,310	7	2,764
01/16/04	2	886,330	7	2,860
01/22/04	2	903,320	6	2,832
02/12/04	2	921,350	21	859
02/20/04	2	943,660	8	2,789
02/27/04	2	962,930	7	2,753
03/19/04	2	1,024,620	21	2,938
04/02/04	2	1,049,020	14	1,743
04/16/04	2	1,090,960	14	2,996
04/23/04	2	1,113,640	7	3,240
04/30/04	2	1,135,930	7	3,184
05/14/04	2	1,175,970	14	2,860
06/04/04	2	1,247,530	21	3,408
06/18/04	2	1,291,550	14	3,144
07/02/04	2	1,335,500	14	3,139
07/09/04	2	1,358,500	7	3,286

MW56				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
07/16/04	2	1,376,990	7	2,641
07/30/04	2	1,419,610	14	3,044
09/17/04	0	1,519,670	49	2,042

GPM - Gallons per minute



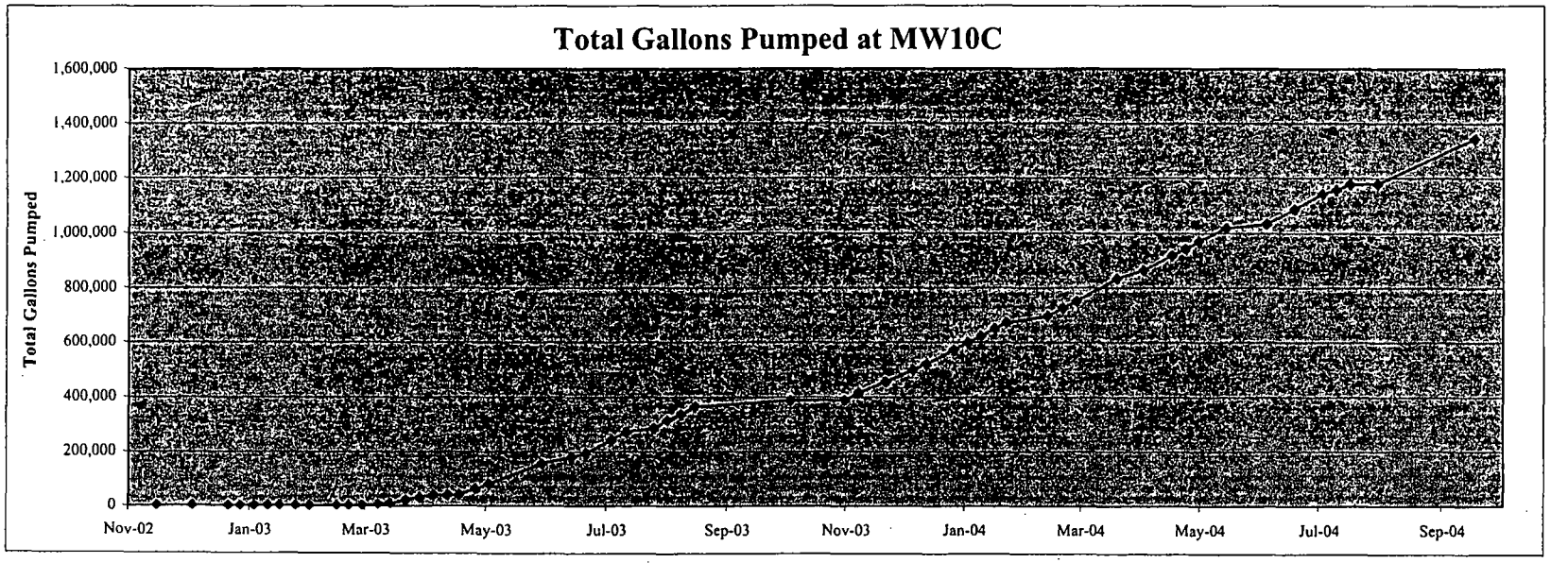
Pumping Data for Lower Aquifer Monitoring Well MW10C
Through September 2004

MW10C				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
11/15/02	0.5	1,580	---	---
12/03/02	0.5	1,580	18	0
12/21/02	0.5	1,580	18	0
12/27/02	0.5	1,580	6	0
01/03/03	0.5	1,580	7	0
01/10/03	0.5	1,580	7	0
01/16/03	0.5	1,580	6	0
01/24/03	0.5	1,580	8	0
01/31/03	0.5	1,580	7	0
02/14/03	0.5	2,210	14	45
02/20/03	0.5	2,210	6	0
02/27/03	0.5	2,210	7	0
03/07/03	1	5,840	8	454
03/13/03	1	9,350	6	585
03/21/03	1	22,470	8	1,640
03/28/03	1	32,930	7	1,494
04/04/03	1	40,800	7	1,124
04/11/03	1	40,810	7	1
04/17/03	1	42,750	6	323
04/25/03	1	63,370	8	2,578
05/02/03	1	81,750	7	2,626
05/29/03	1	156,790	27	2,779
06/13/03	1	180,950	15	1,611
06/20/03	1	192,880	7	1,704
07/03/03	1	242,300	13	3,802
07/11/03	1	272,930	8	3,829
07/25/03	2	285,410	14	891

MW10C				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
08/01/03	2	313,850	7	4,063
08/08/03	2	335,510	7	3,094
08/15/03	2	364,550	7	4,149
10/03/03	2	387,450	49	467
10/31/03	2	388,270	28	29
11/07/03	2	414,050	7	3,683
11/21/03	2	454,920	14	2,919
12/05/03	2	496,910	14	2,999
12/12/03	2	519,610	7	3,243
12/26/03	2	571,330	14	3,694
01/02/04	2	597,570	7	3,749
01/09/04	2	622,910	7	3,620
01/16/04	2	649,150	7	3,749
01/22/04	2	671,460	6	3,718
02/12/04	2	695,330	21	1,137
02/20/04	2	725,160	8	3,729
02/27/04	2	751,020	7	3,694
03/19/04	2	832,820	21	3,895
04/02/04	2	864,160	14	2,239
04/16/04	2	916,440	14	3,734
04/23/04	2	942,880	7	3,777
04/30/04	2	969,850	7	3,853
05/14/04	2	1,018,210	14	3,454
06/04/04	2	1,032,860	21	698
06/18/04	2	1,086,740	14	3,849
07/02/04	2	1,140,680	14	3,853
07/09/04	2	1,155,710	7	2,147

MW10C				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
07/16/04	2	1,176,790	7	3,011
07/30/04	2	1,177,420	14	45
09/17/04	0	1,343,810	49	3,396

GPM - Gallons per minute



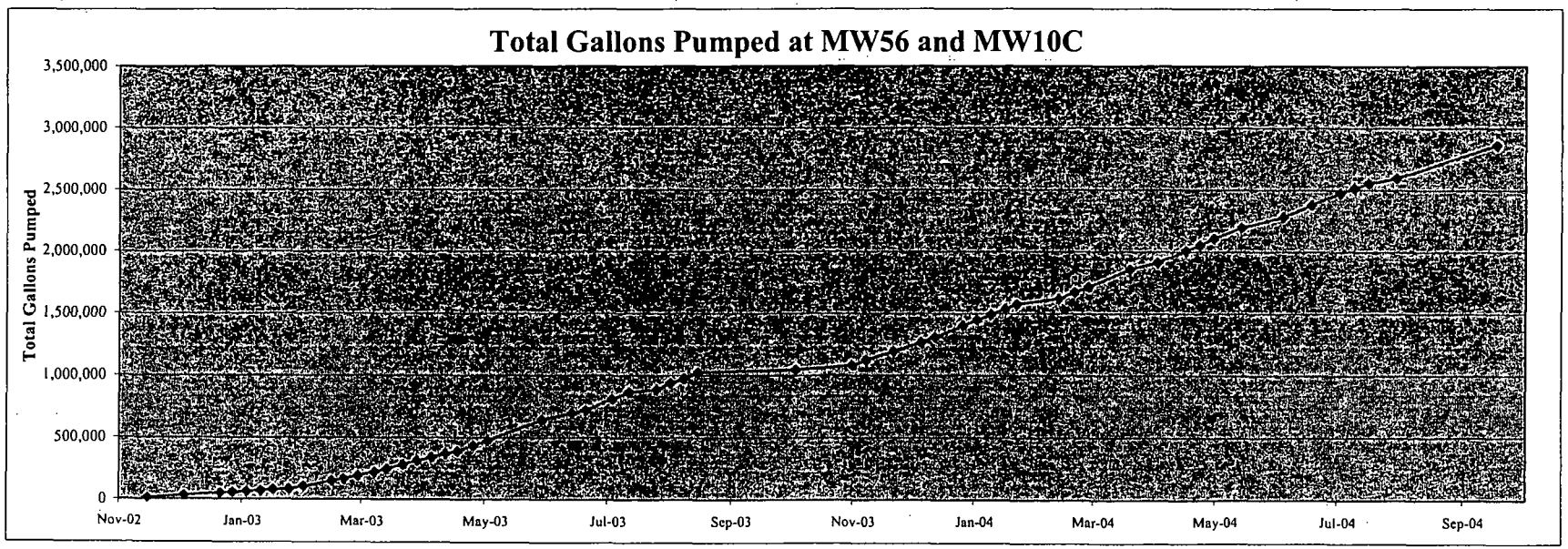
Combined Pumping Data for Lower Aquifer Monitoring Wells MW10C and MW56 Through September 2004

MW56 and MW10C				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
11/15/02	1.5	12,200	---	---
12/03/02	1.5	33,200	18	1,167
12/21/02	2	51,710	18	1,028
12/27/02	2	56,450	6	790
01/03/03	2	65,040	7	1,227
01/10/03	2	71,710	7	953
01/16/03	2	78,960	6	1,208
01/24/03	2	86,420	8	933
01/31/03	2.5	106,980	7	2,937
02/14/03	2.5	149,520	14	3,039
02/20/03	2.5	168,760	6	3,207
02/27/03	2.5	192,340	7	3,369
03/07/03	3	221,820	8	3,685
03/13/03	3	245,790	6	3,995
03/21/03	3	283,850	8	4,758
03/28/03	3	312,860	7	4,144
04/04/03	3	340,160	7	3,900
04/11/03	3	368,300	7	4,020
04/17/03	3	391,290	6	3,832
04/25/03	3	436,960	8	5,709
05/02/03	3	477,520	7	5,794
05/29/03	3	643,430	27	6,145
06/13/03	3	695,070	15	3,443
06/20/03	3	719,810	7	3,534
07/03/03	3	807,950	13	6,780
07/11/03	3	862,080	8	6,766
07/25/03	4	884,190	14	1,579

MW56 and MW10C				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
08/01/03	4	934,060	7	4607
08/08/03	4	971,910	7	5,407
08/15/03	4	1,022,370	7	7,209
10/03/03	4	1,045,300	49	468
10/31/03	4	1,078,690	28	1,193
11/07/03	4	1,123,180	7	6,356
11/21/03	4	1,193,840	14	5,047
12/05/03	4	1,267,440	14	5,257
12/12/03	4	1,307,410	7	5,710
12/26/03	4	1,398,390	14	6,499
01/02/04	4	1,444,530	7	6,591
01/09/04	4	1,489,220	7	6,384
01/16/04	4	1,535,480	7	6,609
01/22/04	4	1,574,780	6	6,550
02/12/04	4	1,616,680	21	1,995
02/20/04	4	1,668,820	8	6,518
02/27/04	4	1,713,950	7	6,447
03/19/04	4	1,857,440	21	6,833
04/02/04	4	1,913,180	14	3,981
04/16/04	4	2,007,400	14	6,730
04/23/04	4	2,056,520	7	7,017
04/30/04	4	2,105,780	7	7,037
05/14/04	4	2,194,180	14	6,314
06/04/04	4	2,280,390	21	4,105
06/18/04	4	2,378,290	14	6,993
07/02/04	4	2,476,180	14	6,992
07/09/04	4	2,514,210	7	5,433

MW56 and MW10C				
Measurement Date	Flow Rate (GPM)	Total Gallons Pumped	Days Between Measurements	Gallons per Day
07/16/04	4	2,553,780	7	5,653
07/30/04	4	2,597,030	14	3,089
09/17/04	0	2,863,480	49	5,438

GPM - Gallons per minute



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