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# TECHNICAL MEMORANDUM
# UPPER AQUIFER INVESTIGATION
# (PHASE II)
## WELL INSTALLATION AND SAMPLING

AMERICAN CHEMICAL SERVICE, INC.
NPL SITE
GRIFFITH, INDIANA

*PREPARED FOR:*
ACS RD/RA EXECUTIVE COMMITTEE

•••

*PREPARED BY:*
MONTGOMERY WATSON
*ADDISON, ILLINOIS*

OCTOBER 1996

MONTGOMERY WATSON

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# 1

# INTRODUCTION

This Technical Memorandum summarizes the investigation activities and results of the second phase of the Upper Aquifer Investigation conducted at the American Chemical Service, Inc. NPL site in Griffith, Indiana during July and August 1996. The investigation was conducted in accordance with the July 25, 1996 Upper Aquifer Investigation Monitoring Well Installation and Sampling Proposal. Specific Operating Procedures (SOPs) were approved with modifications by the U.S. EPA on June 28, 1996. Investigation activities were also conducted in accordance with the draft Quality Assurance Project Plan (QAPP) and U.S. EPA comments regarding the QAPP.

The purpose of this second phase of the Upper Aquifer Investigation was to install and sample monitoring wells at the site to confirm the approximate extent of groundwater contamination in the upper aquifer delineated by the first phase of the Upper Aquifer Investigation. The first phase of the Upper Aquifer Investigation consisted of a Geoprobe investigation conducted at the ACS site from February through March 1996. Shallow groundwater samples were collected from 110 temporary sampling points (i.e., hydraulic probes) and analyzed with a field gas chromatograph (GC) for a target list of VOCs. The extent of total VOC detections in the upper aquifer delineated by the Geoprobe investigation is shown in Figure 1.

Based on the results of the Geoprobe investigation, 13 monitoring wells, eight piezometers and two staff gauges were installed in the upper aquifer at locations around the perimeter of the ACS site and used to characterize shallow groundwater flow directions and delineate the extent of groundwater contamination in the upper aquifer. The locations of monitoring wells, piezometers and staff gauges installed during the second phase of Upper Aquifer Investigation are shown on Figure 1.

## 1.1 OBJECTIVES

Specific objectives of the Upper Aquifer Investigation included:

1. Verifying the depth to the upper confining clay layer at each well and piezometer location and adding to the database of upper clay surface elevations measured at the site.

2. Confirming the extent of groundwater contamination at the site delineated by the Geoprobe investigation.

3. Evaluating vertical hydraulic gradients in the upper aquifer within the wetlands area west of the facility.

4. Refining the shallow groundwater flow patterns previously delineated at the site.

## 1.2 SCOPE OF WORK

The following activities were completed to meet the objectives of the Upper Aquifer Investigation:

- Thirteen monitoring wells and eight piezometers were installed in the upper aquifer.
- Two staff gauges were installed north of the Grand Trunk railroad.
- Newly installed monitoring wells were developed and sampled and groundwater samples were analyzed for full scan TCL organics and TAL metals.
- Water levels were measured in all upper aquifer wells and piezometers located at the site.

# 2

# Field Activities

## 2.1 DRILLING AND WELL INSTALLATION

### 2.1.1 Monitoring Well and Piezometer Borings

Prior to initiating drilling activities, the locations of monitoring wells and nested piezometers were staked by Montgomery Watson and a U.S. EPA representative.

Monitoring well and piezometer borings were drilled utilizing an all-terrain, track-mounted drill rig equipped with 4.25 inch inner diameter (ID) hollow stem augers (HSA). Soil samples were collected using a 2-inch diameter split-spoon sampler at 2.5 foot intervals (i.e., 0 to 2.5 ft, 2.5 to 5 ft, etc.) to the top of the upper confining clay. One soil sample was then collected two feet into the clay, to confirm the presence of the upper confining clay layer.

Each boring was logged in accordance with the Unified Soil Classification System (USCS). Drilling was conducted in accordance with the approved Monitoring Well Sampling Proposal and SOP for the Upper Aquifer Investigation (revision: July 25, 1996) with the following exceptions:

- Monitoring well (MW41) was not installed in the original staked location because the water table at this location was present in the upper confining clay rather than the upper aquifer. Several exploratory boreholes were drilled in the area to identify where the upper aquifer was thicker so that the proposed monitoring well could be installed along the eastern edge of the VOC plume. The final location of well MW41 was approved by U.S. EPA and is approximately 60 feet south from the original staked location.

Locations of new monitoring wells, piezometers, and staff gauges are presented on Figure 1. Monitoring well and piezometer construction information is summarized on Table 1. Boring logs for upper aquifer monitoring wells and piezometers are included in Appendix A

### 2.1.2 Monitoring Well and Piezometer Installation

Thirteen monitoring wells (MW37 through MW49) were installed to further delineate the extent of VOC contamination in the upper aquifer (Figure 1). Monitoring well MW45, located in the southeast area of the site, and MW48 and MW49, located north of the site, were installed within the known extent of the VOC plume. The remaining ten monitoring

wells were installed along the edge of the VOC plume, as defined during the Geoprobe investigation.

All monitoring wells were installed using a 10-foot, 0.010 slot, stainless steel well screen, stainless steel riser, and steel protective casing and lock in accordance with the approved SOP. If soil borings during well installation activities had indicated a saturated thickness greater than 15 feet, two wells would have been installed at that location, one well consisting of a 10-foot well screen at the water table, and another well at the base of the aquifer. Because the saturated thickness encountered at all locations was less than 15 feet, a single upper aquifer well was installed at each location. In areas where the water table was high (i.e., standing water in the wetlands), the well was installed in a manner to assure a proper and adequate seal above the well screen, in accordance with the SOP presented in the Upper Aquifer Investigation Technical Memorandum and Monitoring Well Sampling Proposal and Protocols (revised July 25, 1995).

Eight piezometers (P64 through P71) were installed at four locations (two nested at each location) in the wetlands, west of the ACS facility (Figure 1). The deep piezometer at each location was installed with a 2.5 foot PVC well screen and riser pipe at the base of the upper aquifer (top of the upper confining clay). The shallow piezometer at each location was installed with a 5 foot PVC screen and riser in the upper portion of the aquifer which intersected the water table.

Well construction details for the monitoring wells and piezometers are presented in Appendix B. Monitoring well and piezometer installation was conducted in accordance with the approved Monitoring Well Sampling Proposal and Protocol SOP for the Upper Aquifer Investigation (revision: July 25, 1996).

### 2.1.3 Staff Gauge Installation

Two staff gauges (SG11 and SG12) were installed in the ditch to the north of the Grand Trunk railroad and the ACS facility to document surface water elevations and aid in evaluating groundwater flow information north of the site. The staff gauge locations are presented on Figure 1.

## 2.2 MONITORING WELL DEVELOPMENT AND SURVEYING

Following installation of the monitoring wells in the upper aquifer, the wells were developed on July 18-19, 1996 in accordance with the approved Monitoring Well Sampling Proposal and Protocol SOP for the Upper Aquifer Investigation (revision: July 25, 1996). Monitoring well development information is presented in Appendix C.

Monitoring wells and piezometers were later surveyed by Area Survey of Orland Park, Illinois. Survey information, ground surface and casing elevations, and local coordinates (northing and easting) for the 13 new monitoring wells, eight piezometers, and two staff gauges are presented in Appendix D.

## 2.3 WATER LEVELS

To determine the groundwater flow direction in the upper aquifer and vertical gradients in the wetlands, water level measurements were made at new and existing upper aquifer wells and piezometers on August 27, 1996.

## 2.4 MONITORING WELL SAMPLING

Prior to sampling, monitoring wells were purged using low-flow methods in accordance with the approved Monitoring Well Sampling Proposal and Protocol SOP for the Upper Aquifer Investigation (revision: July 25, 1996). Field parameters for pH, specific conductivity, temperature, and turbidity were measured and recorded during well purging activities. A summary of groundwater sampling field parameter data is presented on Table 2.

New upper aquifer monitoring wells were sampled between August 5 and 8, 1996 and analyzed for full scan TCL volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated byphenols (PCBs) and TAL inorganic parameters. Monitoring well sampling was performed in accordance with the approved Monitoring Well Sampling Proposal and Protocol SOP for the Upper Aquifer Investigation (revision: July 25, 1996).

# 3

# HYDROGEOLOGY OF THE UPPER AQUIFER

## 3.1 GEOLOGY

Boring logs generated during phase 2 of the Upper Aquifer Investigation are presented in Appendix A. Soils of the upper aquifer are generally classified as fine to coarse sand with a trace to some silt and clay. The soils were classified with the United Soil Classification System (USCS) symbols of SP, SP-SM, and SM (Appendix A). The thickness of the upper aquifer encountered during this investigation ranged from approximately 11 feet at several locations to 17 feet at MW43 (Table 1). More information on the geology of the upper aquifer is presented in the June 1991 Remedial Investigation (RI) Report.

The top of the upper clay confining layer was confirmed at all monitoring well and piezometer locations. The upper surface of clay confining layer was encountered typically at an elevation near 620 feet above mean sea level (amsl) (Table 1). More variability in the elevation of the top of the clay confining layer was found in the southeast portion of the site, where the upper clay surface ranged from approximately 613 feet amsl at MW43 to 624 feet amsl at MW47. In other areas of the site, the top of the clay confining layer ranged from 618 feet to 623 feet amsl (Table 1). The elevations of the top of the upper clay confining layer determined with this investigation are consistent with the findings of previous investigations and expand the data base regarding the upper clay surface elevation at the site. The clay confining layer is generally classified with a USCS symbol of CL (Appendix A).

The geology of the upper aquifer and depth to the upper clay confining layer are consistent with the findings of the June 1991 RI and the Lower Aquifer and Barrier Wall Investigations recently performed at the site (January through March 1996).

## 3.2 HYDROGEOLOGY

### 3.2.1 Water Levels

Water levels were measured at new and existing upper aquifer monitoring wells, piezometers, and staff gauges on August 27, 1996. The measured water level depths and calculated groundwater elevations are presented on Table 3.

Depth to water in the upper aquifer monitoring wells ranged between 3.31 feet below top of casing (toc) in MW19 to 21.39 feet below toc in MW6. The groundwater elevation in the upper aquifer ranged from 637.04 feet amsl at MW18 to 625.42 amsl at M-3S located at the Griffith landfill. The saturated thickness of the upper aquifer ranged from 13.7 feet at MW43 to 7.4 feet at MW45.

Two staff gauges installed in the ditch north of the Grand Trunk Railroad and the ACS facility were dry when measured on August 27, 1996.

### 3.2.2 Groundwater Flow Direction

The water table as measured on August 27, 1996 is depicted on Figure 2. Based on the August 1996 data, the direction of shallow groundwater flow in the upper aquifer is generally to the west in the area west of Colfax Avenue and southeast in the area southeast of the intersection of Colfax Avenue and Reder Road.

The westward orientation of shallow groundwater flow lines at the ACS plant is directed towards the wetland area and dewatering activities in the northwestern corner of the Griffith landfill. Southeast of the intersection of Colfax Avenue and Reder Road, the direction of groundwater flow in the upper aquifer appears to mimic the topography in the area. Groundwater flow in the upper aquifer follows the slope of the land surface to the southeast (Figure 2).

The direction of horizontal groundwater flow in the upper aquifer is consistent with upper aquifer data presented in the June 1991 RI and recent water level data collected on October 30, 1995 and June 5, 1996. Water table maps generated from these two measurement periods were presented in the November 8, 1995 Technical Memorandum and the July 16, 1996 Water Level Memorandum, respectively.

### 3.2.3 Vertical Gradients in Wetlands

A summary of vertical hydraulic gradients measured in nested piezometers in the wetland area on August 27, 1996 is presented on Table 4. Vertical gradients in the wetland area were generally very low showing little difference in hydraulic head between the upper and lower portions of the upper aquifer. Vertical gradients were upward at P64/P65 (0.009) and P66/P67 (0.005), downward at P70/P71 (0.020) and non-existent at P68/P69 (0.000) (Table 4). Upward gradients observed at the two southern piezometer nests indicate that groundwater is discharging to the wetland in this area of the site. The downward gradient measured at P70/P71 indicates some groundwater movement downward from the upper portions of the aquifer to the lower in this area. Approximately 150 feet west of the P70/P71 piezometer nest, no vertical gradients were measured at piezometer nest P68/P69. The vertical gradient information is consistent with a typical wetland area where shallow groundwater is in close contact with surface water and shallow groundwater recharge and discharge to the wetland fluctuate throughout the year as the water table periodically rises and falls in the area.

# 4

# ANALYTICAL RESULTS

New upper aquifer monitoring wells were sampled at the site between August 5 to 8, 1996 for VOCs, SVOCs, PCBs and metals. Laboratory analytical results for VOCs, SVOCs and PCBs are presented in Appendix E. Laboratory analytical results for metals are included in Appendix F.

Overall, concentrations of VOCs measured in new monitoring wells confirm the edge of the VOC plume delineated by the Geoprobe investigation (Figure 1). Detections of SVOCs in monitoring wells correlate with detections of VOCs, whereas concentrations of total and dissolved trace metals appear to be randomly distributed in new monitoring wells.

## 4. 1 VOC RESULTS

A summary of VOC detections in new monitoring wells installed at the ACS site is presented in Table 5. VOCs were detected at monitoring wells MW37, MW39, MW45, MW46, MW48 and MW49 (Table 5). Figure 3 summarizes the VOC detections in site monitoring wells.

### 4.1.1 North Side

The highest concentrations of VOCs were detected at monitoring wells MW48 and MW49 which were located within the known boundaries of the VOC plume in the northern area of the site. Benzene and methylene chloride were detected in these two wells at concentrations exceeding site remediation levels. Also in the northern area of the site, benzene and vinyl chloride were detected at MW39 at concentrations exceeding remediation levels for the final remedy (Table 5). VOCs were not detected at MW38 and benzene was found at an estimated quantity of 0.1 J ug/L at MW37. Considering the western orientation of shallow groundwater flow in this area of the site (Figure 2), monitoring wells MW38 and MW37 bound the limits of VOC contamination north of the site. Although the benzene concentration of 12 ug/L at MW39 exceeds the site remediation level for benzene, the concentration is very low compared to concentrations within the plume as shown at MW48 and MW49. Therefore, the VOC detections at MW39 indicate that the edge of the plume has been identified.

### 4.1.2 East Side

East of the site, VOCs were not detected at MW40. This is consistent with the results of the Geoprobe investigation which did not identify any target VOC concentrations in the upper aquifer in this area of the site.

### 4.1.3 Southeast Area

Southeast of the site, VOCs, including benzene, xylenes, chloroethane, chlorobenzene and ethylbenzene were detected in the monitoring well in the center of the plume area (MW45) (Table 5). The concentration of benzene detected at MW45 (530 ug/L) exceeded the remediation level of 5 ug/L listed in Appendix B of the SOW . The remaining wells in this area (MW41 through MW44, and MW47) did not exhibit any VOC contamination and subsequently surround the VOC detections observed in MW45. The concentration of benzene observed in monitoring well MW45 (530 ug/L) correlates to the concentration observed in the same area during the Geoprobe investigation (1100 ug/L at GP134). The lack of VOC detections in monitoring wells surrounding MW45 is also consistent with the Geoprobe investigation since these surrounding monitoring wells were located in non-contaminated areas delineated by the Geoprobe investigation.

### 4.1.4 Wetland Area to the West

West of the site, concentrations of vinyl chloride, benzene and 4-methyl-2-pentanone were detected at monitoring well MW46 (Table 5) but at such low levels they were only estimated. This was consistent with the results of the Geoprobe investigation which indicated no significant VOC migration in groundwater located beyond the edge of the wetland.

Acetone was not detected in any of the monitoring well samples. This is contrary to the results of the Geoprobe investigation which found low levels of acetone (less than 50 ug/L) in Geoprobe samples from many sampling points near the leading edge of the VOC plume. Because the acetone detections in the Geoprobe investigation samples were not confirmed by the more definitive monitoring well samples, it is likely that the low levels of acetone (less than 50 ug/L) measured in the hydraulic probe investigation were anomalous, possibly the result of instrument cross-contamination during the field GC analysis.

## 4. 2 SVOCs AND PCBs RESULTS

A summary of SVOC results detections in new monitoring wells installed at the ACS site is presented in Table 5. Laboratory analytical reports for SVOC and PCB results are presented in Appendix E.

SVOC compounds were generally detected in the same monitoring wells exhibiting VOC contamination. Highest SVOC concentrations were found in monitoring wells MW48 and MW49, located within the limits of known groundwater contamination in the northern area of the site, and MW45, located in the central portion of the VOC plume in the southeast area of the site. Phenol was generally detected at the highest concentrations in these wells,

ranging from 41 ug/L at MW45 to 110 ug/L at MW48 (Table 5). Bis-2-chloroethyl-ether (7 ug/l), napthalene (84 ug/l), and 2-methylnapthalene (4 ug/l) were also detected in MW45 and estimated concentrations of bis-2-chloroethyl-ether and 4-methylphenol were detected at MW46.

Bis-2-ethylhexyl-phthalate was detected at estimated concentrations in monitoring wells MW39, MW41, MW42, MW46, and MW48 at concentrations ranging between 3 ug/L and 8 ug/L (Table 5). The concentration of bis-2-ethylhexyl-phthalate at MW41 (8 J ug/L) exceeded the remediation level established for the site (5.8 ug/L). This compound is a common laboratory contaminant which is commonly used in the production of plastics, such as polyvinyl chloride (*Handbook of Environmental Data on Organic Chemicals, Second Edition,* Verschueren, 1983). The phthalates anomaly will be further evaluated in the site monitoring program.

No SVOCs were detected in monitoring wells MW37, MW38, MW40, MW42, MW43, and MW44. Tentatively identified compounds (TICs) were detected in samples at all wells except MW37, MW42, MW43, and MW44 (Appendix E). The greatest number of TICs and highest estimated concentrations were found in samples collected at MW48 and MW49.

PCBs were not detected in any of the groundwater samples collected during the Upper Aquifer Investigation.

## 4. 3 METALS RESULTS

A summary of metals results is presented on Table 6. Complete validated metal analytical results are presented in Appendix F.

Groundwater samples from new upper aquifer wells were analyzed for both total and dissolved metals (Table 6). Major groundwater constituents, calcium, magnesium, and sodium were generally detected at the highest concentrations in the upper aquifer, followed by detections of minor metals constituents, manganese, potassium and aluminum (Table 6).

Other metals apparently randomly located in upper aquifer monitoring wells included arsenic, barium, beryllium, cadmium, lead, nickel and thallium (Table 6). Arsenic and barium were found in many of the upper aquifer wells; concentrations of arsenic (dissolved) ranged from 1.5 ug/L at MW42 to 25.5 ug/L at MW49, and barium concentrations ranged from 18.5 ug/L at MW41 to 164 ug/L at MW44. Beryllium was detected in two monitoring well samples (MW37 and MW40) at concentrations less than 0.32 ug/L. Cadmium was detected in total and dissolved samples collected at MW37 (dissolved concentration of 0.24 ug/L) and a total metals sample at MW47 (0.2 ug/L). Lead was detected at MW47 at a dissolved concentration of 20 ug/L and a total metals concentration of 38.5 ug/L at MW45. Nickel and thallium were found in a total metals sample collected at MW39; thallium was also detected at MW48 at 1.2 ug/L (Table 6).

Concentrations of arsenic detected at MW43, MW45, MW48 and MW49, beryllium detected at MW37 and MW40, and thallium at MW39 and MW48 exceeded the remediation levels for these constituents listed in Appendix B of the SOW. The random detections of these metals at various monitoring wells at the site suggest that the metal detections are naturally occurring background concentrations.

Due to the low turbidity achieved with the low flow sampling, most total metals analyses are directly comparable to dissolved analyses (Table 6). Aluminum and iron (abundant clay mineral constituents) appear to be most variable between dissolved and total groundwater samples.

# 5

# CONCLUSIONS AND RECOMMENDATIONS

## 5.1 CONCLUSIONS

The following conclusions are based on data developed from the second phase of Upper Aquifer Investigation:

1. The upper aquifer was found to consist of predominantly fine to coarse sand and vary in thickness from approximately 11 feet to 17 feet. The saturated thickness of the upper aquifer ranged from 13.7 feet at MW43 to 7.4 feet at MW45.

2. The top of the upper confining clay was found at elevations ranging from 613 feet at MW43 to 624 feet amsl at MW47. This range of elevations is consistent with the results of previous investigations and adds to the database of upper clay surface elevation measured at the site.

3. The direction of horizontal groundwater flow in the upper aquifer is generally to the west at the ACS facility toward the wetland area and dewatering activities in the northwestern corner of the Griffith landfill. Southeast of the intersection of Colfax Avenue and Reder Road, the horizontal direction of groundwater flow is to the southeast. The horizontal groundwater flow direction is consistent with upper aquifer data presented in the June 1991 RI and recent water level data collected on October 30, 1995 and June 5, 1996.

4. Vertical gradients in the wetland area were generally very low and variable between the upper and lower portions of the upper aquifer, ranging from 0.009 upward to 0.020 downward. The vertical gradient information is consistent with a typical wetland area where shallow groundwater is in close contact with surface water and shallow groundwater recharge and discharge to the wetland fluctuate throughout the year as the water table periodically rises and falls in the area.

5. North of the ACS facility, benzene, methylene chloride and vinyl chloride were detected in upper aquifer monitoring wells above remediation levels. The highest concentrations of VOCs were detected at monitoring wells MW48 and MW49 which were located within the known boundaries of the VOC plume in the northern area of the site. Based on the western orientation of shallow groundwater flow in this area of

the site (Figure 2), monitoring wells MW37, MW38 and MW39 bound the limits of VOC contamination north of the site.

6. VOCs were not detected in the upper aquifer monitoring well (MW40) installed east of the facility. This is consistent with the results of the Geoprobe investigation which did not identify any target VOC concentrations in this area of the site.

7. West of the site, trace concentrations of VOCs were estimated in the water from one monitoring well (MW46). The is consistent with the results of the Geoprobe investigation which indicated no significant contaminant migration beyond the edge of the wetland.

8. Southeast of the intersection of Colfax Avenue and Reder Road, benzene was detected in one monitoring well (MW45) exceeding the site remediation level. MW45 is located inside the known limits of the VOC plume. The other wells in this area surround the VOC plume and provide delineation of the extent of groundwater contamination.

9. Bis-2-ethylhexyl-phthalate was detected at an estimated concentration in one monitoring well exceeding the site remediation level. This compound is a suspected laboratory contaminant. Its significance at the site will be evaluated in the site monitoring plan. No other SVOCs were detected in upper aquifer wells exceeding the remediation levels.

10. Major and minor groundwater metal constituents were detected most frequently in the upper aquifer. Other metals randomly detected in upper aquifer monitoring wells included arsenic, barium, beryllium, cadmium, lead, nickel and thallium.

11. The concentration of benzene detected at MW39 at the northeast area of the site (12 ug/L) exceeded the site remediation level. Because monitoring well MW39 was located at the edge of VOC detections delineated by the Geoprobe investigation, the low concentrations detected in this well are consistent with the Geoprobe investigation results and indicate the edge of the VOC plume.

## 5.2 RECOMMENDATIONS OF PHASE II UPPER AQUIFER INVESTIGATION

### 5.2.1 Piezometer Installation

The piezometer P57 will be installed in the northeast area to confirm groundwater flow patterns in this area of the site. The location of proposed piezometer P57 is shown on Figure 4.

### 5.2.2 Upper Aquifer Monitoring Plan

Monitoring wells installed during the second phase of upper aquifer investigation delineate the horizontal extent of groundwater contamination at the ACS site. These wells will be added to the upper aquifer monitoring plan to provide indications of compliance or contaminant migration in the upper aquifer.

# 6

# UPPER AQUIFER MONITORING PLAN

## 6.1 INTRODUCTION

This monitoring plan proposes the well locations and sampling parameters for upper aquifer quarterly monitoring activities at the ACS site. The monitoring plan includes collecting water level measurements at the upper aquifer monitoring wells, piezometers, and staff gauges and water quality baseline sampling at 17 upper aquifer wells starting in October 1996. In addition, the plan includes annual sampling of four interior plume wells.

The first round of sampling for the baseline will consist of the full-scan sampling of new upper aquifer wells conducted in August 1996 and the proposed sampling of selected existing upper aquifer wells in October 1996. The results of these combined sampling events will constitute the first quarter of the baseline study.

The objectives of the Upper Aquifer Monitoring Plan include the following:

1. Monitor groundwater quality at the boundaries of the known extent of contamination to determine whether the contaminant plume in the upper aquifer is remaining constant or expanding.

2. Measure water levels in the upper aquifer to determine how remedial actions will affect groundwater flow patterns at the site.

3. For remedial design information, monitor groundwater quality in the plume interior to determine how contaminant concentrations change in response to remedial actions.

The locations of monitoring wells proposed for the upper aquifer monitoring plan are shown on Figure 4. To facilitate review of the plan, the locations of the proposed monitoring wells have been grouped on Table 7 according to their location in the north, east, southeast, southwest, wetland or plume interior areas of the site. Each of these areas are discussed separately below.

## 6.2 SAMPLING LOCATIONS

### 6.2.1 North Area

Three new monitoring wells are included in the monitoring plan for the northern area of the site (Figure 4). These wells, MW37, MW38, and MW39 bound the limits of VOC contamination north of the site and will provide evidence whether the plume is remaining constant or expanding in this area.

### 6.2.2 East Side

Four monitoring wells, including one new well (MW40) and three existing wells (MW11, MW12 and MW18) will comprise the baseline sampling points for the eastern portion of the site. These wells are generally located side-gradient in the upper aquifer to the ACS Site and will bound the limits of VOC contamination east of the site.

Monitoring wells MW4, MW5 and MW17 are not included in the upper aquifer monitoring plan. These wells are within the known limits of the contaminant plume east of the site.

### 6.2.3 Southeast Area

Baseline monitoring in the southeast area will include the five new wells installed during the upper aquifer investigation (MW41, MW42, MW43, MW44, and MW47) and existing monitoring well MW19. These wells surround the VOC detections delineated by the Geoprobe investigation and will monitor potential plume migration in the upper aquifer downgradient from the landfill area.

Monitoring well MW20 is not included in the upper aquifer monitoring plan because it is located within the known limits of the contaminant plume and because of its proximity to MW19. MW6 has been included in this area to monitor the interior of the plume (see Section 6.2.6).

### 6.2.4 Southwest Area

One monitoring well, MW15, will serve as a sentinel well southwest of the landfill to monitor potential contaminant migration southwestward from the landfill. Other monitoring wells located within the landfill area have not been included in the upper aquifer monitoring plan. These wells are sampled as part of routine landfill monitoring requirements. Sampling results will be obtained from the landfill and included with the results of the ACS Sampling Program (see Section 6.5).

### 6.2.5 Wetland Area

Three monitoring wells, including one new well (MW46) and two existing wells (MW13 and MW14) will monitor potential VOC migration into the wetland area west of the ACS facility.

Monitoring wells MW2 and MW3 are not included in the upper aquifer monitoring plan because these wells are located within the known limits of the contaminant plume in the

wetland area of the site. Well W-1 is not included because it was installed prior to the RI and has not been previously been used as a monitoring point for the NPL Site.

### 6.2.6 Plume Interior

Four monitoring wells located within the known limits of contamination will be sampled on an annual basis to measure the behavior of contaminant concentrations within the plume over time. Two wells are located in the northern area of the plume (MW48, MW49) and two wells are located within the plume southeast of the landfill (MW6, MW45).

## 6.3 SAMPLE ANALYSIS

During the first quarter (August and October 1996 combined), all groundwater samples from the proposed upper aquifer monitoring wells will be analyzed for full-scan Target Compound List (TCL) and Target Analyte List (TAL) parameters (Table 7).

In the first and second quarters of 1997, groundwater samples collected from the north, east, southeast, southwest, and wetland areas of the site will be analyzed for compounds in a Target Indicator List (TIL). The TIL includes those VOCs that have consistently been detected in the contaminant plume (benzene, chloroethane, ethylbenzene, toluene, xylene, chlorobenzene, 1,2-dichloroethene, and 1,1-dichloroethane). In the fourth quarter of the quarterly baseline sampling (third quarter of 1997), all groundwater samples from the proposed upper aquifer monitoring wells will be analyzed for full-scan TCL and TAL parameters (Table 7). These four consecutive quarters of monitoring will form the baseline data base for the monitoring program.

Groundwater samples from plume interior wells will be sampled for TCL analyses. Because these wells are known to be contaminated, the purpose of monitoring concentrations in these wells is to detect how the contaminant concentrations change over an extended period of time. Monitoring these wells on a quarterly basis would not allow sufficient time for changes to occur and show concentration trends. Variability observed in concentrations over a three month period may be more indicative of analytical variability than actual changing concentration conditions. Further, upon completion of the barrier wall and perimeter groundwater containment system, the upper aquifer groundwater flow will be in a transition period, establishing a new flow regime.

## 6.4 PROCEDURES

### 6.4.1 Water Level Measurements

Water levels will be collected at each monitoring well, piezometer and staff gauge in the upper aquifer prior to sampling the wells. Water levels will be collected in a single day to minimize potential water level variability with time (as part of the overall site monitoring plan, water levels measurements will be collected in the lower aquifer wells and piezometers within the same 24-hour period as water levels measurements in the upper aquifer).

### 6.4.2 Monitoring Well Sampling

Prior to sampling, all monitoring wells will be purged and sampled using low-flow methods in accordance with the approved Monitoring Well Sampling Proposal and Protocol SOP for the Upper Aquifer Investigation (revision: July 25, 1996). Field parameters for pH, specific conductance, temperature and turbidity will be measured and recorded during well purging. Sampling activities will be conducted in a typical period of one week.

## 6.5 SAMPLING SCHEDULE

A sampling schedule for the first year of baseline sampling is shown on Table 7. The preliminary sampling schedule for 1998 is also presented. Table 7 contains the preliminary schedule for 1988. It includes semi-annual sampling, conducted in the first quarter of 1998 and consist of sampling 16 upper aquifer wells in the north, east, southeast, southwest, and wetland areas of the site for TIL analysis. During the second semiannual sampling event of 1998, groundwater samples from all proposed upper aquifer monitoring wells, including the plume interior wells, would be analyzed for TCL parameters (Table 7).

At the conclusion of the baseline sampling, a technical memorandum will be prepared to summarize the results for the preceding year and revise the sampling plan, if necessary. The revised plan would include the rationale for each on-going sampling point and present justification for changes in the locations, frequency, and parameters for the sampling program.

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TABLES

**Table 1**
**Monitoring Well Construction Information**
**Upper Aquifer Investigation**
**American Chemical Service, Inc. - NPL Site**
**Griffith, Indiana**

| Well ID | Coordinates | | Ground Elevation (1) | Top of Casing Elevation (1) | Screened Interval | | Screen Length (2) | Depth to Clay (ft) | Clay Elevation | Well Material | Year Installed |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northing | Easting | | | Top (1) | Bottom (1) | | | | | |
| MW37 | 7976.0 | 5395.0 | 634.0 | 636.78 | 631.00 | 620.80 | 9.80 | 14.00 | 620.00 | 2" SS | 1996 |
| MW38 | 8216.0 | 5903.0 | 633.6 | 636.51 | 630.60 | 620.40 | 9.45 | 11.50 | 622.10 | 2" SS | 1996 |
| MW39 | 7947.0 | 6253.0 | 634.0 | 637.77 | 631.00 | 621.00 | 9.95 | 11.00 | 623.00 | 2" SS | 1996 |
| MW40 | 6831.0 | 6349.0 | 636.6 | 639.46 | 633.60 | 623.40 | 9.95 | 13.50 | 623.10 | 2" SS | 1996 |
| MW41 | 4517.0 | 6242.0 | 629.6 | 632.74 | 626.60 | 616.40 | 9.95 | 13.00 | 616.60 | 2" SS | 1996 |
| MW42 | 3808.0 | 6264.0 | 629.3 | 632.32 | 625.30 | 615.30 | 9.80 | 14.00 | 615.30 | 2" SS | 1996 |
| MW43 | 3719.0 | 5880.0 | 630.2 | 633.56 | 625.20 | 615.20 | 9.00 | 18.00 | 612.20 | 2" SS | 1996 |
| MW44 | 4303.0 | 5390.0 | 630.1 | 633.04 | 627.10 | 616.90 | 9.95 | 11.00 | 619.10 | 2" SS | 1996 |
| MW45 | 4388.0 | 5830.0 | 632.1 | 635.35 | 629.10 | 619.10 | 9.95 | 11.00 | 621.10 | 2" SS | 1996 |
| MW46 | 7424.0 | 4526.0 | 630.2 | 633.32 | 627.20 | 617.20 | 9.95 | 11.50 | 618.70 | 2" SS | 1996 |
| MW47 | 5084.0 | 5958.0 | 637.6 | 640.54 | 634.60 | 624.60 | 9.98 | 13.00 | 624.60 | 2" SS | 1996 |
| MW48 | 7814.0 | 5669.0 | 632.6 | 636.36 | 629.60 | 619.60 | 9.95 | 11.50 | 621.10 | 2" SS | 1996 |
| MW49 | 7650.0 | 5551.0 | 634.2 | 637.00 | 631.20 | 621.00 | 9.95 | 12.50 | 621.70 | 2" SS | 1996 |
| P64 | 7065.0 | 4617.0 | 631.1 | 634.87 | 629.10 | 624.10 | 4.35 | — | — | 2" PVC | 1996 |
| P65 | 7063.0 | 4615.0 | 631.2 | 634.77 | 622.20 | 620.20 | 2.00 | 12.30 | 618.90 | 2" PVC | 1996 |
| P66 | 7034.0 | 4729.0 | 632.1 | 636.02 | 630.10 | 625.10 | 4.35 | — | — | 2" PVC | 1996 |
| P67 | 7034.0 | 4732.0 | 632.0 | 636.06 | 621.00 | 618.50 | 2.00 | 13.50 | 618.50 | 2" PVC | 1996 |
| P68 | 7752.0 | 4743.0 | 630.8 | 634.48 | 628.80 | 623.80 | 4.35 | — | — | 2" PVC | 1996 |
| P69 | 7751.0 | 4741.0 | 630.8 | 634.66 | 620.80 | 618.30 | 2.50 | 12.50 | 618.30 | 2" PVC | 1996 |
| P70 | 7680.0 | 4880.0 | 631.3 | 635.38 | 628.55 | 624.20 | 4.35 | — | — | 2" PVC | 1996 |
| P71 | 7682.0 | 4876.0 | 631.2 | 635.32 | 621.20 | 618.70 | 2.50 | 12.50 | 618.70 | 2" PVC | 1996 |

Notes:

2" PVC = 2" Schedule 40 Poly vinyl chloride well screen and casing
2" SS = 2" Stainless steel well screen and casing
P = Piezometer
MW = Monitoring Well

Footnotes:

(1) All elevations shown are in ft. above mean sea level (amsl).
(2) Screen lengths (slotted) are shown as general measurements. For exact screen lengths, see Appendix B of Report.

**Table 2**
**Summary of Field Parameter Results**
**Upper Aquifer Investigation**
**American Chemical Service, Inc.**
**Griffith, Indiana**

| Upper Aquifer Well Location | Field Parameters | | | | |
|---|---|---|---|---|---|
| | pH (sta. units) | Conductivity [1] (field measurement) | Conductivity [2] (adjusted to 25°C) | Temperature (deg. C.) | Turbidity (NTU) |
| MW37 | 7.00 | 225 | 256 | 19 | 44 |
| MW38 | 7.22 | 385 | 494 | 14 | 4.7 |
| MW39 | 7.06 | 1160 | 1415 | 16 | 14 |
| MW40 | 6.91 | 210 | 244 | 18 | 10 |
| MW41 | 7.00 | 328 | 353 | 21.5 | 6.2 |
| MW42 | 7.21 | 980 | 1089 | 20 | 36 |
| MW43 | 7.25 | 800 | 930 | 18 | 158 |
| MW44 | 7.79 | 610 | 792 | 13.5 | 22.9 |
| MW45 | 7.44 | 900 | 1047 | 18 | 25 |
| MW46 | 6.71 | 880 | 1100 | 15 | 43 |
| MW47 | 6.12 | 90 | 96 | 22 | 16 |
| MW48 | 6.83 | 1160 | 1247 | 21.5 | 39 |
| MW49 | 6.96 | 590 | 711 | 16.5 | 4.5 |

Notes:

1 Conductivity (field measurements) values measured in the field in units of umhos/cm

2 Conductivity values corrected for temperature and reported in units of umhos/cm @ 25° C.

NTU - nephelometric turbidity units

# Table 3
## Upper Aquifer
## Groundwater Elevations - August 27, 1996
## American Chemical Service, Inc. - NPL Site

**UPPER AQUIFER MONITORING WELLS**

| Location | Reference Points | | | 8/27/96 | | Well Status |
|---|---|---|---|---|---|---|
| | East | North | TOC | Depth | Elev | |
| MW-2 | 5033 | 6839 | 638.05 | 7.43 | 630.62 | Needs Repair - Still functional |
| MW-3 | 5299 | 7314 | 636.62 | 6.37 | 630.25 | Moved |
| MW-4 | 6112 | 7126 | 641.05 | 6.97 | 634.08 | Good Condition |
| MW-5 | 5788 | 6482 | 642.13 | 7.49 | 634.64 | Good Condition |
| MW-6 | 5298 | 5520 | 655.28 | 21.39 | 633.89 | Good Condition |
| MW-11 | 6377 | 7329 | 640.47 | 6.70 | 633.77 | Good Condition |
| MW-12 | 6019 | 6352 | 642.74 | 8.10 | 634.64 | Good Condition |
| MW-13 | 5050 | 7814 | 634.08 | 4.56 | 629.52 | Good Condition |
| MW-14 | 4882 | 6995 | 638.56 | 9.32 | 629.24 | Good Condition |
| MW-15 | 4721 | 5003 | 637.89 | 5.14 | 632.75 | Good Condition |
| MW-16 | 5065 | 6596 | 638.52 | 7.81 | 630.71 | Good Condition |
| MW-17 | 5656 | 5677 | 647.14 | 12.68 | 634.46 | Good Condition |
| MW-18 | 5836 | 5746 | 644.89 | 7.85 | 637.04 | Good Condition |
| MW-19 | 5231 | 4943 | 635.78 | 3.31 | 632.47 | Good Condition |
| MW-20 | 5095 | 5028 | 642.98 | 10.31 | 632.67 | Good Condition |
| AM-05 | 5224 | 6360 | 637.28 | 4.44 | 632.84 | (Test Well) |
| Red Well | 5204 | 6466 | 639.01 | 6.76 | 632.25 | Good Condition |
| W-1 | 5305 | 7323 | 637.33 | 7.08 | 630.25 | Good Condition |
| | | | | | | |

**NEW UPPER AQUIFER MONITORING WELLS**

| Location | Reference Points | | | 8/27/96 | | Well Status |
|---|---|---|---|---|---|---|
| | East | North | TOC | Depth | Elev | |
| MW37 | 5395 | 7976 | 636.78 | 6.38 | 630.40 | Installed Week of 7/15/96 |
| MW38 | 5903 | 8216 | 636.51 | 6.15 | 630.36 | Installed Week of 7/15/96 |
| MW39 | 6253 | 7947 | 637.77 | 6.40 | 631.37 | Installed Week of 7/15/96 |
| MW40 | 6349 | 6831 | 639.46 | 5.05 | 634.41 | Installed Week of 7/15/96 |
| MW41 | 6242 | 4517 | 632.74 | 7.03 | 625.71 | Installed Week of 7/15/96 |
| MW42 | 6264 | 3808 | 632.32 | 6.22 | 626.10 | Installed Week of 7/15/96 |
| MW43 | 5880 | 3719 | 633.56 | 6.66 | 626.90 | Installed Week of 7/15/96 |
| MW44 | 5390 | 4303 | 633.04 | 4.37 | 628.67 | Installed Week of 7/15/96 |
| MW45 | 5830 | 4388 | 635.35 | 6.87 | 628.48 | Installed Week of 7/15/96 |
| MW46 | 4526 | 7424 | 633.32 | 3.83 | 629.49 | Installed Week of 7/15/96 |
| MW47 | 5958 | 5084 | 640.54 | 7.09 | 633.45 | Installed Week of 7/15/96 |
| MW48 | 5669 | 7814 | 636.36 | 5.80 | 630.56 | Installed Week of 7/15/96 |
| MW49 | 5551 | 7650 | 637.00 | 6.15 | 630.85 | Installed Week of 7/15/96 |

# Table 3
## Upper Aquifer
## Groundwater Elevations - August 27, 1996
## American Chemical Service, Inc. - NPL Site

**LEACHATE/UPPER AQUIFER LANDFILL WELLS**

| | Reference Points | | | 8/27/96 | | |
|---|---|---|---|---|---|---|
| Location | East | North | TOC | Depth | Elev | Well Status |
| LW-1 | 4807 | 5070 | 644.57 | 11.60 | 632.97 | Good Condition |
| LW-2 | 4662 | 5465 | 649.70 | 16.44 | 633.26 | Good Condition |
| M-1S | 4362 | 5743 | 639.09 | 7.04 | 632.05 | Good Condition |
| M-2S | 3999 | 6491 | 637.12 | 9.05 | 628.07 | Good Condition |
| M-3S | 4142 | 6819 | 631.88 | 6.46 | 625.42 | Good Condition |
| M-4S | 4953 | 6537 | 633.42 | 4.56 | 628.86 | Good Condition |
| M-5S | 4170 | 7089 | 634.17 | 7.41 | 626.76 | Good Condition |

**STAFF GAUGES**

| | Reference Points | | | 8/27/96 | | |
|---|---|---|---|---|---|---|
| Location | East | North | TOC | Depth | Elev | Status |
| SG-1 | 5023 | 6196 | 633.98 | Dry | Dry | New Gauge Installed 10-2-95 |
| SG-2 | 4423 | 6864 | 633.82 | 2.05 | 631.77 | New Gauge Installed 10-2-95 |
| SG-3 | 4180 | 7123 | 631.58 | Dry | Dry | New Gauge Installed 10-2-95 |
| SG-4 | 5228 | 6611 | 636.14 | Gone | | Ran over during barrier wall drill |
| SG-5 | 5464 | 7713 | 632.47 | 3.55 | 628.92 | New Gauge Installed 10-2-95 |
| SG-6 | 4495 | 8075 | 630.73 | 2.44 | 628.29 | New Gauge Installed 10-25-95 |
| SG-7 | 5403 | 6889 | 637.21 | 2.17 | 635.04 | New Gauge Installed 10-2-95 |
| SG-8 | 5405 | 5202 | | | | Replaced by SG8R |
| SG-9 | 3846 | 6336 | 632.59 | Gone | | Gauge has never been found |
| SG-10 | 6748 | 7238 | 636.47 | 2.48 | 633.99 | New Gauge Installed 10-2-95 |
| SG-8R | 5409 | 5252 | 635.03 | 2.11 | 632.92 | Pond Stafff Gauge |
| SG-11 | 5859 | 8245 | 634.64 | Dry | Dry | Installed 7/19/96 |
| SG-12 | 5596 | 7867 | 634.50 | Dry | Dry | Installed 7/19/96 |
| | | | | | | |

**NEW PIEZOMETERS - WETLANDS**

| Piezometers | Reference Points | | | 8/27/96 | | |
|---|---|---|---|---|---|---|
| Location | East | North | TOC | Depth | Elev | Status |
| P-64 | 4617 | 7065 | 634.87 | 7.25 | 627.62 | Screen @ top of upper aquifer |
| P-65 | 4615 | 7063 | 634.77 | 7.10 | 627.67 | Screen @ base of upper aquifer |
| P-66 | 4729 | 7034 | 636.02 | 7.82 | 628.20 | Screen @ top of upper aquifer |
| P-67 | 4732 | 7034 | 636.06 | 7.82 | 628.24 | Screen @ base of upper aquifer |
| P-68 | 4743 | 7752 | 634.48 | 5.68 | 628.80 | Screen @ top of upper aquifer |
| P-69 | 4741 | 7751 | 634.66 | 5.86 | 628.80 | Screen @ base of upper aquifer |
| P-70 | 4880 | 7680 | 635.38 | 6.70 | 628.68 | Screen @ top of upper aquifer |
| P-71 | 4876 | 7682 | 635.32 | 6.77 | 628.55 | Screen @ base of upper aquifer |

# Table 3
## Upper Aquifer
## Groundwater Elevations - August 27, 1996
## American Chemical Service, Inc. - NPL Site

**EXISTING PIEZOMETERS**

| Piezometers | Reference Points | | | 8/27/96 | | |
|---|---|---|---|---|---|---|
| Location | East | North | TOC | Depth | Elev | Status |
| P-1 | 5700 | 6365 | 642.84 | 8.26 | 634.58 | Good Condition |
| P-2 | 5577 | 6165 | 645.57 | 11.10 | 634.47 | Good Condition |
| P-3 | 5453 | 6470 | 639.87 | 5.77 | 634.10 | Good Condition |
| P-4 | 5432 | 6228 | 639.25 | 4.89 | 634.36 | Good Condition |
| P-5 | 5285 | 6510 | 636.70 | NM | NM | Buried in Brush |
| P-6 | 5150 | 6551 | 638.75 | 7.10 | 631.65 | Good Condition |
| P-7 | 5950 | 6630 | 643.63 | 9.00 | 634.63 | Good Condition |
| P-8 | 6156 | 6734 | 639.27 | 4.94 | 634.33 | Good Condition |
| P-9 | 6134 | 6994 | 638.88 | 4.72 | 634.16 | Good Condition |
| P-10 | 5413 | 5852 | 649.32 | 15.06 | 634.26 | Good Condition |
| P-11 | 5199 | 5900 | 649.14 | 14.90 | 634.24 | Good Condition |
| P-12 | 5076 | 5723 | 650.08 | 16.09 | – | Product Level |
| P-13 | 4878 | 5735 | 651.20 | 17.18 | 634.02 | Good Condition |
| P-14 | 5014 | 5914 | 645.33 | 11.43 | 633.90 | New |
| P-15 | 5003 | 6187 | 639.93 | 7.64 | 632.29 | New |
| P-16 | 4673 | 5749 | 648.80 | 14.44 | 634.36 | New |
| P-17 | 4584 | 6006 | 654.64 | 20.50 | 634.14 | New |
| P-18 | 4623 | 6224 | 649.84 | 4.90 | 644.94 | New |
| P-19 | 4977 | 5043 | 639.71 | 6.92 | 632.79 | Good Condition |
| P-20 | 5104 | 6233 | 643.10 | 8.83 | 634.27 | Good Condition |
| P-21 | 4569 | 6537 | 632.82 | 6.84 | 625.98 | New |
| P-22 | 4636 | 6732 | 634.30 | 7.88 | 626.42 | Good Condition |
| P-23 | 4689 | 7018 | 636.18 | 8.14 | 628.04 | Good Condition |
| P-24 | 5002 | 7178 | 636.06 | 6.40 | 629.66 | Good Condition |
| P-25 | 5131 | 7510 | 635.01 | 5.76 | 629.25 | Re-Installed 10-25-95 |
| P-26 | 4764 | 7309 | 634.23 | 6.09 | 628.14 | Good Condition |
| P-27 | 4904 | 7020 | 639.70 | 10.04 | 629.66 | Good Condition |
| P-28 | 5883 | 7486 | 644.53 | 11.47 | 633.06 | Good Condition |
| P-29 | 5738 | 6619 | 642.37 | 7.67 | 634.70 | Good Condition |
| P-30 | 5626 | 6793 | 642.42 | 7.72 | – | Product Level |
| P-31 | 5480 | 7159 | 641.03 | 7.69 | 633.34 | Good Condition |
| P-32 | 5746 | 7026 | 642.32 | 8.28 | 634.04 | Re-Installed 10-27-95 |
| P-33 | 5226 | 7129 | 640.20 | 7.77 | 632.43 | Re-Installed 10-27-95 |
| P-34 | 5279 | 6692 | 639.46 | 6.22 | 633.24 | Good Condition |
| P-35 | 5515 | 6572 | 641.44 | 6.94 | 634.50 | Re-Installed 10-27-95 |
| P-36 | 5410 | 6851 | 645.89 | 11.16 | 634.73 | Re-Installed 10-27-95 |
| P-37 | 5330 | 6949 | 641.37 | – | – | Damaged-Former Product Well |
| P-38 | 5149 | 6992 | 639.87 | – | – | Eliminated |
| P-39 | 5940 | 6902 | 642.00 | 7.73 | 634.27 | New |
| P-40 | 5880 | 7229 | 640.10 | 6.46 | 633.64 | Good Condition |
| P-41 | 5702 | 7353 | 638.82 | 5.73 | 633.09 | Good Condition |
| P-49 | 5119 | 6951 | 638.96 | 7.08 | 631.88 | Old P-51 |

# Table 3
## Upper Aquifer
## Groundwater Elevations - August 27, 1996
## American Chemical Service, Inc. - NPL Site

**EXISTING PIEZOMETERS (continued)**

| | | | | | | |
|---|---|---|---|---|---|---|
| P-50 | 5129 | 6964 | 639.59 | 8.10 | 631.49 | Good Condition |
| P-51 | 3876 | 6859 | 635.07 | 7.39 | 627.68 | Installed 10-25-95 |
| P-52 | 4100 | 7845 | 636.66 | 7.73 | 628.93 | Revised 2-15-96) |
| P-53 | 4597 | 8015 | 636.18 | 6.49 | 629.69 | Installed 10-24-95 |
| P-54 | 4936 | 8081 | 638.28 | 7.80 | 630.48 | Installed 10-2-95 |
| P-55 | 5628 | 7979 | 636.08 | 6.13 | 629.95 | Installed 10-25-95 |
| P-56 | 6405 | 7665 | 639.46 | 6.30 | 633.16 | Installed 10-23-95 |
| P-57 | | | | | | Not Yet Installed |
| P-58 | 6454 | 6932 | 638.30 | 4.00 | 634.30 | Installed 10-24-95 |
| P-59 | 6389 | 6590 | 639.22 | 5.05 | 634.17 | Installed 10-24-95 |
| P-60 | 6111 | 6051 | 640.23 | 5.47 | 634.76 | Installed 10-26-95 |
| P-61 | 5533 | 5284 | 638.58 | 5.74 | 632.84 | Installed 10-24-95 |
| P-62 | 5665 | 4945 | 637.06 | 5.65 | 631.41 | Installed 10-24-95 |
| P-63 | 5483 | 7689 | 637.70 | 7.31 | 630.39 | Installed 10-23-95 |
| EW-1 | 5113 | 6942 | 639.50 | 7.85 | 631.65 | Good Condition |

Notes
Shading indicates that water elevation was not used in developing contour map
NM - Not measured

**Table 4**
**Vertical Gradient Calculations**
**Upper Aquifer Investigation**
**American Chemical Service, Inc. - NPL Site**
**Griffith, Indiana**

| Piezometer Nest | Screen Interval | | Screen Midpoint | [illegible] | Groundwater Elevation | | [illegible] | Hydraulic Gradient |
|---|---|---|---|---|---|---|---|---|
| | Top | Bottom | | | Upper | Lower | | |
| P64 | 629.05 | 624.10 | 626.58 | [illegible] | 627.62 | | | |
| P65 | 622.20 | 620.20 | 621.20 | [illegible] | | 627.67 | [illegible] | 0.009 |
| P66 | 629.45 | 625.10 | 627.28 | [illegible] | 628.2 | | | |
| P67 | 620.50 | 618.50 | 619.50 | [illegible] | | 628.24 | [illegible] | 0.005 |
| P68 | 628.15 | 623.80 | 625.98 | [illegible] | 628.8 | | | |
| P69 | 621.10 | 618.60 | 619.85 | [illegible] | | 628.8 | [illegible] | 0.00 |
| P70 | 628.55 | 624.20 | 626.38 | [illegible] | 628.68 | | | |
| P71 | 621.00 | 619.00 | 620.00 | [illegible] | | 628.55 | [illegible] | -0.02 |

Notes:
(-) = Downward Vertical Gradient
(+) = Upward Vertical Gradient
Water Levels Collected by Montgomery Watson on August 27, 1996

| VOCs | Remediation Levels (ug/L) | I M'up | Trip Blanks TB01 | TB02 | Field Blanks TB03 | FB01 | FB02 |
|---|---|---|---|---|---|---|---|
| Chloromethane | 8.4 | | | 0.2 J | | 0.8 J | 0.9 J |
| Vinyl Chloride | 0.25 | | | | | | |
| Chloroethane | | | | | | | |
| Methylene Chloride | 5.0 | | 0.2 J | 1 J | | 0.7 | |
| Acetone | 2300 - 192 | | | 17 J | 9 J | 19 J | 21 J |
| 1,1-Dichloroethane | 2200 -183 | | | | | | |
| cis-1,2-Dichloroethene | 330 - 28 | | | | | | |
| trans-1,2-Dichloroethene | | | | | | | |
| Chloroform | | | | | | 0.8 J | 0.8 J |
| 1,2-Dichloroethane | | | 0.5 J | | 0.5 J | 0.2 J | |
| Bromodichloromethane | | | | | | 0.2 J | 0.2 J |
| Benzene | 5.0 | 0 | | | | | |
| 4-methyl-2-pentanone | 640 - 53 | | | | | | |
| Chlorobenzene | | | | | | | |
| Ethylbenzene | 390 - 33 | | | | | | |
| Toluene | | | | | | | 0.1 J |
| Xylenes | | | | | | | |
| 1,4-Dichlorobenzene | 3.3 | | 0.1 J | | 0.1 J | | |
| **SVOCs** | | | NA | NA | NA | | |
| Phenol | | | | | | 3 J | |
| bis(2-chloroethyl) ether | 21.0 | | | | | | |
| 2,2'-oxybis(1-chloropropane) | | | | | | | |
| 4-methylphenol | | | | | | | |
| Isophorone | 19 | | | | | | |
| Naphthalene | | | | | | | |
| 2-methylnaphthalene | | | | | | | |
| 2,6-Dinitrotoluene | | | | | | | |
| bis(2-ethylhexyl)phthalate | 5.8 | | | | | | |

Notes:
Concentrations reported in micrograms per liter (u
J - Concentration estimated below detection limit
U - Compound not detected
NA - Trip blanks not analyzed for SVOCs

# Table 6
## Inorganic Analytical Results
## American Chemical Services, Inc - NPL site
## Griffith, Indiana

| Analyte | Remediation Level ug/L | APD-GWMW37-01 | | | | | | APD-GWMW38-01 | | | | | | APD-GWMW39-01 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 137903 | | | 137910 | | | 137801 | | | 137807 | | | 137905 | | | 137912 | | |
| | | Total | | | Dissolved | | | Total | | | Dissolved | | | Total | | | Dissolved | | |
| | | 8/7/96 | | | 8/6/96 | | | 8/7/96 | | | 8/7/96 | | | 8/6/96 | | | 8/6/96 | | |
| | | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL |
| Aluminum | | 1410 | / | 50.0 | | B/U | 144 | | B/U | 118 | | B/U | 113 | | /U | 273 | | B/U | 59.0 |
| Antimony | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Arsenic | 8.8 | | U/ | 1.0 | | U/ | 1.0 | 3.9 | B/ | 1.0 | 3.2 | B/ | 1.0 | 1.8 | B/ | 1.0 | 1.6 | B/ | 1.0 |
| Barium | | 23.5 | B/ | 10.0 | 20 | B/ | 10.0 | 36.5 | B/ | 10.0 | 38.5 | B/ | 10.0 | 81.0 | B/ | 10.0 | 73.0 | B/ | 10.0 |
| Beryllium | 0.02 | **0.26** | B/ | 0.20 | **0.32** | B/ | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Cadmium | | 0.47 | B/ | 0.20 | 0.24 | B/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Calcium | | 34300 | / | 1000 | 34000 | / | 1000 | 63500 | / | 1000 | 64000 | / | 1000 | 125000 | / | 1000 | 120000 | / | 1000 |
| Chromium | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Cobalt | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Copper | | | B/U | 20.5 | | B/U | 16.0 | | B/U | 12.0 | | B/U | 13.0 | | B/U | 15.5 | | B/U | 23.0 |
| Iron | | | */UJ | 1240.0 | | */UJ | 228 | 6440 | */J | 20.0 | 6450 | */J | 20.0 | 9710 | */J | 20.0 | 7690 | */J | 20.0 |
| Lead | | | S/U | 8.6 | | S/U | 8.8 | | U/ | 1.5 | | B/U | 1.6 | | U/ | 1.5 | | U/ | 1.5 |
| Magnesium | | 9160 | / | 1000 | 8500 | / | 1000 | 22000 | / | 1000 | 22400 | / | 1000 | 22300 | / | 1000 | 21400 | / | 1000 |
| Manganese | 3300 - 275 | 273 | E*/J | 10.0 | 256 | E*/J | 10.0 | **511** | E*/J | 10.0 | **516** | E*/J | 10.0 | **1060** | E*/J | 10.0 | **802** | E*/J | 10.0 |
| Mercury | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Nickel | | | U*/UJ | 20.0 | | U*/UJ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | 712 | */J | 20.0 | | U*/UJ | 20.0 |
| Potassium | | 1500 | B/ | 100 | 1230 | B/ | 100 | 494 | B/ | 100 | 499 | B/ | 100 | 5180 | / | 100 | 5160 | / | 100 |
| Selenium | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Silver | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Sodium | | 5460 | / | 2000 | 6310 | / | 2000 | 5130 | / | 2000 | 5580 | / | 2000 | 117000 | / | 2000 | 116000 | / | 2000 |
| Thallium | 2.4 - 0.2 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | **1.0** | B/ | 1.0 | | U/ | 1.0 |
| Vanadium | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Zinc | | | U/ | 10.0 | | B/U | 13.5 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |

1. All results in ug/L. Dissolved results area from field 0.45 um filtered sample aliquot. Totals were not filtered.
2. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier Definitions:

**B** This Flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit. (e.g., used by the EPA to indicate the results is "bracketed" by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

**E** Interferences were encountered during the ICP Analysis.

**U** Indicates analyte was analyzed for, but was not detected above the Reported Detection Limit (RDL). If the U flag is in the DVQ position, the analyte was detected in the blank and the result has been qualified as undetected, with the RDL set at the sample concentration.

**Bold** indicates exceedence of low end of Remediation levels

# Table 6
## Inorganic Analytical Results
## American Chemical Services, Inc - NPL site
## Griffith, Indiana

| | | APD-GWMW40-01 | | | | | | APD-GWMW41-01 | | | | | | APD-GWMW42-01 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 137802 | | | 137808 | | | 137805 | | | 137811 | | | 137806 | | | 137812 | | |
| | Remediation | Total | | | Dissolved | | | Total | | | Dissolved | | | Total | | | Dissolved | | |
| | Level | 8/7/96 | | | 8/7/96 | | | 8/7/96 | | | 8/7/96 | | | 8/7/96 | | | 8/7/96 | | |
| Analyte | ug/L | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL |
| Aluminum | | 406 | / | 50.0 | | /U | 274 | | B/U | 89.5 | | B/U | 96.5 | 808 | / | 50.0 | | B/U | 144 |
| Antimony | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Arsenic | 8.8 | 1.3 | B/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | 2.1 | B/ | 1.0 | 1.5 | B/ | 1.0 |
| Barium | | 26 | B/ | 10.0 | 31.5 | B/ | 10.0 | 19.0 | B/ | 10.0 | 18.5 | B/ | 10.0 | 90 | B/ | 10.0 | 85 | B/ | 10.0 |
| Beryllium | 0.02 | **0.21** | BN/J | 0.20 | **0.24** | B/J | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 |
| Cadmium | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Calcium | | 30000 | / | 1000 | 31000 | / | 1000 | 44000 | / | 1000 | 43300 | / | 1000 | 139000 | / | 1000 | 136000 | / | 1000 |
| Chromium | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Cobalt | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Copper | | | B/U | 12.5 | | /U | 25.0 | | B/U | 10.5 | | B/U | 10.5 | | B/U | 16.5 | | B/U | 13.0 |
| Iron | | | */UJ | 1190 | | */UJ | 1480 | | */UJ | 1670 | | */UJ | 1680 | | */UJ | 3340 | | */UJ | 1950.0 |
| Lead | | | /U | 10.8 | | /U | 4.1 | | U/ | 1.5 | | U/ | 1.5 | | S/U | 5.7 | | U/ | 1.5 |
| Magnesium | | 9540 | / | 1000 | 9940 | / | 1000 | 13300 | / | 1000 | 13500 | / | 1000 | 49800 | / | 1000 | 49300 | / | 1000 |
| Manganese | 3300 - 275 | **852** | *E/J | 10.0 | **877** | *E/J | 10.0 | **414** | E*/J | 10.0 | **395** | E*/J | 10.0 | **928** | E*/J | 10.0 | **932** | E*/J | 10.0 |
| Mercury | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Nickel | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Potassium | | 1280 | B/ | 100 | 1410 | B/ | 100 | 331 | B/ | 100 | 308 | B/ | 100 | 1700 | B/ | 100 | 1450 | B/ | 100 |
| Selenium | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Silver | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Sodium | | 4120 | B/ | 2000 | 3270 | B/ | 2000 | 3480 | B/ | 2000 | 4010 | B/ | 2000 | 12700 | / | 2000 | 12400 | / | 2000 |
| Thallium | 2.4 - 0.2 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Vanadium | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Zinc | | | U/ | 10.0 | | /U | 75.5 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |

1. All results in ug/L. Dissolved results area from field 0.45 um filtered sample aliquot. Totals were not filtered.
2. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier Definitions:

**B** This Flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit. (e.g., used by the EPA to indicate the results is "bracketed" by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

**E** Interferences were encountered during the ICP Analysis.

**U** Indicates analyte was analyzed for, but was not detected above the Reported Detection Limit (RDL). If the U flag is in the DVQ position, the analyte was detected in the blank and the result has been qualified as undetected, with the RDL set at the sample concentration.

**Bold** indicates exceedence of low end of Remediation levels

chux/j:/4077/technmemo/upper-aq/DATA-MTL.XLS(Validated)
LIMS/jah/JAH/SGW

# Table 6
## Inorganic Analytical Results
## American Chemical Services, Inc - NPL site
## Griffith, Indiana

| Analyte | Remediation Level ug/L | APD-GWMW43-01 | | | | | | APD-GWMW44-01 | | | | | | APD-GWMW45-01 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 137915 | | | 137919 | | | 137916 | | | 137920 | | | 137917 | | | 137921 | | |
| | | Total | | | Dissolved | | | Total | | | Dissolved | | | Total | | | Dissolved | | |
| | | 8/8/96 | | | 8/8/96 | | | 8/8/96 | | | 8/8/96 | | | 8/8/96 | | | 8/8/96 | | |
| | | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL |
| Aluminum | | 2920 | / | 50.0 | | B/U | 82.5 | | B/U | 175 | | B/U | 79.0 | 776 | / | 50.0 | | B/U | 97.5 |
| Antimony | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Arsenic | 8.8 | **17.6** | S/ | 1.0 | **12.3** | S/ | 1.0 | 6.0 | BS/ | 1.0 | 6.6 | BS/ | 1.0 | **21.5** | / | 1.0 | **25.9** | S/ | 1.0 |
| Barium | | 63.0 | B/ | 10.0 | 49.0 | B/ | 10.0 | 106 | B/ | 10.0 | 164 | B/ | 10.0 | 84.5 | B/ | 10.0 | 82.5 | B/ | 10.0 |
| Beryllium | 0.02 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Cadmium | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Calcium | | 115000 | / | 1000 | 108000 | / | 1000 | 90500 | / | 1000 | 98000 | / | 1000 | 97100 | / | 1000 | 93200 | / | 1000 |
| Chromium | | 36.0 | / | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | 29.0 | / | 10.0 | | U/ | 10.0 |
| Cobalt | | 10.0 | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Copper | | | /U | 38.5 | | B/U | 14.0 | | B/U | 15.5 | | U/ | 10.0 | | B/U | 21.0 | | B/U | 19.0 |
| Iron | | 13900 | */J | 20.0 | 7280 | */J | 20.0 | | *UJ | 1480 | | */UJ | 2050 | 9570 | */J | 20.0 | 8050 | */J | 20.0 |
| Lead | | | S/U | 7.5 | | US/ | 1.5 | | U/ | 1.5 | | U/ | 1.5 | 38.5 | S/ | 1.5 | | W/U | 3.5 |
| Magnesium | | 48100 | / | 1000 | 45000 | / | 1000 | 37200 | / | 1000 | 60700 | / | 1000 | 27500 | / | 1000 | 24700 | / | 1000 |
| Manganese | 3300 - 275 | **374** | E*/J | 10.0 | 262 | E*/J | 10.0 | 38.5 | E*/J | 10.0 | | E*/UJ | 45.5 | **641** | E*/J | 10.0 | **612** | E*/J | 10.0 |
| Mercury | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Nickel | | | B*/UJ | 26.5 | | U*/UJ | 20.0 | | B*/UJ | 23.0 | | U*/UJ | 20.0 | | B*/UJ | 35.0 | | U*/UJ | 20.0 |
| Potassium | | 1800 | B/ | 100 | 491 | B/ | 100 | 990 | B/ | 100 | 982 | B/ | 100 | 5350 | / | 100 | 5070 | / | 100 |
| Selenium | | | US/ | 2.0 | | US/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | US/ | 2.0 |
| Silver | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Sodium | | 10100 | / | 2000 | 9240 | / | 2000 | 19700 | / | 2000 | 33100 | / | 2000 | 70900 | / | 2000 | 68100 | / | 2000 |
| Thallium | 2.4 - 0.2 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Vanadium | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Zinc | | | /U | 29.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | B/U | 15.0 | | U/ | 10.0 |

1. All results in ug/L. Dissolved results area from field 0.45 um filtered sample aliquot. Totals were not filtered.
2. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier Definitions:

**B** This Flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit. (e.g., used by the EPA to indicate the results is "bracketed" by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

**E** Interferences were encountered during the ICP Analysis.

**U** Indicates analyte was analyzed for, but was not detected above the Reported Detection Limit (RDL). If the U flag is in the DVQ position, the analyte was detected in the blank and the result has been qualified as undetected, with the RDL set at the sample concentration.

**Bold** indicates exceedence of low end of Remediation levels

# Table 6
## Inorganic Analytical Results
## American Chemical Services, Inc - NPL site
## Griffith, Indiana

| Analyte | Remediation Level ug/L | APDGWMW46-01 | | | | | | APD-GWMW47-01 | | | | | | APD-GWMW47-91 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 137907 | | | 137914 | | | 137803 | | | 137809 | | | 137804 | | | 137810 | | |
| | | Total | | | Dissolved | | | Total | | | Dissolved | | | Total | | | Dissolved | | |
| | | 8/5/96 | | | 8/5/96 | | | 8/7/96 | | | 8/7/96 | | | 8/7/96 | | | 8/7/96 | | |
| | | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL |
| Aluminum | | 821 | / | 50.0 | | B/U | 121 | | /U | 383 | | B/U | 102 | 476 | / | 50.0 | | B/U | 141 |
| Antimony | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Arsenic | 8.8 | 3.7 | B/ | 1.0 | 4.1 | BS/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Barium | | 132 | B/ | 10.0 | 131 | B/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Beryllium | 0.02 | | U/ | 0.20 | | U/ | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 | | UN/UJ | 0.20 |
| Cadmium | | | U/ | 0.20 | | U/ | 0.20 | 0.2 | B/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Calcium | | 115000 | / | 1000 | 115000 | / | 1000 | 8530 | / | 1000 | 8760 | / | 1000 | 8890 | / | 1000 | 8550 | / | 1000 |
| Chromium | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Cobalt | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Copper | | | B/U | 13.0 | | /U | 34.5 | | B/U | 15.0 | | B/U | 15.5 | | B/U | 14.5 | | B/U | 13.0 |
| Iron | | 21700 | */J | 20.0 | 21900 | */J | 20.0 | | */UJ | 254 | | */UJ | 162 | | */UJ | 346 | | B*/UJ | 88.5 |
| Lead | | | S/U | 5.0 | | US/ | 1.5 | 23.0 | S/ | 1.5 | 20 | / | 1.5 | 23 | / | 1.5 | 31.2 | / | 1.5 |
| Magnesium | | 30500 | / | 1000 | 30200 | / | 1000 | 2630 | B/ | 1000 | 2650 | B/ | 1000 | 2740 | B/ | 1000 | 2750 | B/ | 1000 |
| Manganese | 3300 - 275 | **1510** | E*/J | 10.0 | **1510** | E*/J | 10.0 | 27.0 | *E/J | 10.0 | 19 | *E/J | 10.0 | 26.5 | *E/J | 10.0 | 22 | E*/J | 10.0 |
| Mercury | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Nickel | | | U*/UJ | 20.0 | | U*/UJ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Potassium | | 1450 | B/ | 100 | 1180 | B/ | 100 | 1090 | B/ | 100 | 1100 | B/ | 100 | 1170 | B/ | 100 | 1220 | B/ | 100 |
| Selenium | | | U/ | 2.0 | | US/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | UW/ | 2.0 | | US/ | 2.0 |
| Silver | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Sodium | | 62200 | / | 2000 | 60900 | / | 2000 | 3020 | B/ | 2000 | 3290 | B/ | 2000 | 4100 | B/ | 2000 | 3710 | B/ | 2000 |
| Thallium | 2.4 - 0.2 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Vanadium | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Zinc | | | U/ | 10.0 | | U/ | 10.0 | | /U | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |

1. All results in ug/L. Dissolved results area from field 0.45 um filtered sample aliquot. Totals were not filtered.
2. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier Definitions:

B This Flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit. (e.g., used by the EPA to indicate the results is "bracketed" by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

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**Bold** indicates exceedence of low end of Remediation levels

# Table 6
## Inorganic Analytical Results
## American Chemical Services, Inc - NPL site
## Griffith, Indiana

| Analyte | Remediation Level ug/L | APD-GWMW48-01 | | | | | | APD-GWMW49-01 | | | | | | APD-GWMW49-91 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 137904 | | | 137911 | | | 137901 | | | 137908 | | | 137902 | | | 137909 | | |
| | | Total | | | Dissolved | | | Total | | | Dissolved | | | Total | | | Dissolved | | |
| | | 8/6/96 | | | 8/6/96 | | | 8/6/96 | | | 8/6/96 | | | 8/6/96 | | | 8/6/96 | | |
| | | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL |
| Aluminum | | | /U | 254 | | B/U | 99.5 | | B/U | 110 | | B/U | 99.0 | | B/U | 61.5 | | B/U | 89.0 |
| Antimony | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Arsenic | 8.8 | **11.3** | / | 1.0 | **14.2** | S/ | 1.0 | **24.5** | / | 1.0 | **25.5** | / | 1.0 | **25** | / | 1.0 | **22.3** | / | 1.0 |
| Barium | | 160 | B/ | 10.0 | 152 | B/ | 10.0 | 96.5 | B/ | 10.0 | 95.5 | B/ | 10.0 | 100 | B/ | 10.0 | 98.5 | B/ | 10.0 |
| Beryllium | 0.02 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Cadmium | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Calcium | | 142000 | / | 1000 | 138000 | / | 1000 | 81200 | / | 1000 | 84100 | / | 1000 | 80900 | / | 1000 | 83500 | / | 1000 |
| Chromium | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Cobalt | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Copper | | | B/U | 13.5 | | B/U | 11.5 | | B/U | 11.0 | | B/U | 11.5 | | B/U | 13.5 | | B/U | 12.0 |
| Iron | | 30800 | */J | 20.0 | 30300 | */J | 20.0 | 20100 | */J | 20.0 | 18600 | */J | 20.0 | 20100 | */J | 20.0 | 18800 | */J | 20.0 |
| Lead | | | S/U | 3.4 | | U/ | 1.5 | | U/ | 1.5 | | S/U | 4.5 | | U/ | 1.5 | | S/U | 4.6 |
| Magnesium | | 20100 | / | 1000 | 19300 | / | 1000 | 10700 | / | 1000 | 10900 | / | 1000 | 10500 | / | 1000 | 10700 | / | 1000 |
| Manganese | 3300 - 275 | **688** | E*/J | 10.0 | **566** | E*/J | 10.0 | **1950** | E*/J | 10.0 | **1860** | E*/J | 10.0 | **2000** | E*/J | 10.0 | **1960** | E*/J | 10.0 |
| Mercury | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Nickel | | | U*/UJ | 20.0 | | B*/UJ | 32.0 | | U*/UJ | 20.0 | | U*/UJ | 20.0 | | B*/UJ | 21.0 | | U*/UJ | 20.0 |
| Potassium | | 7560 | B/ | 100 | 7390 | B/ | 100 | 3760 | B/ | 100 | 3690 | B/ | 100 | 3640 | B/ | 100 | 3530 | B/ | 100 |
| Selenium | | | US/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Silver | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Sodium | | 52100 | / | 2000 | 51000 | / | 2000 | 21300 | / | 2000 | 22700 | / | 2000 | 20600 | / | 2000 | 20300 | / | 2000 |
| Thallium | 2.4 - 0.2 | **1.1** | B/ | 1.0 | **1.2** | B/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Vanadium | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Zinc | | | U/ | 10.0 | | B/U | 11.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |

1. All results in ug/L. Dissolved results area from field 0.45 um filtered sample aliquot. Totals were not filtered.
2. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier Definitions:

**B** This Flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit. (e.g., used by the EPA to indicate the results is "bracketed" by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

**E** Interferences were encountered during the ICP Analysis.

**U** Indicates analyte was analyzed for, but was not detected above the Reported Detection Limit (RDL). If the U flag is in the DVQ position, the analyte was detected in the blank and the result has been qualified as undetected, with the RDL set at the sample concentration.

**Bold** indicates exceedence of low end of Remediation levels

# Table 6
## Inorganic Analytical Results
## American Chemical Services, Inc - NPL site
## Griffith, Indiana

| Analyte | Remediation Level ug/L | APD-GWFB01-01 | | | | | | APD-GWFB02-01 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 137906 | | | 137913 | | | 137918 | | | 137922 | | |
| | | Total | | | Dissolved | | | Total | | | Dissolved | | |
| | | 8/6/96 | | | 8/6/96 | | | 8/8/96 | | | 8/8/96 | | |
| | | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL | Conc | LQ/DVQ | RDL |
| Aluminum | | | B/U | 76.0 | | B/U | 60.5 | | B/U | 57.0 | | U/ | 50.0 |
| Antimony | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Arsenic | 8.8 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Barium | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Beryllium | 0.02 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Cadmium | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Calcium | | | U/ | 1000 | | U/ | 1000 | | U/ | 1000 | | U/ | 1000 |
| Chromium | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Cobalt | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Copper | | | B/U | 13.5 | | B/U | 18.5 | | B/U | 10.5 | | U/ | 10.0 |
| Iron | | | B*/UJ | 375 | | B*/UJ | 30.0 | | B*/UJ | 23.0 | | U*/UJ | 20.0 |
| Lead | | 3.1 | / | 1.5 | 3.0 | / | 1.5 | 2.9 | B/ | 1.5 | | U/ | 1.5 |
| Magnesium | | | U/ | 1000 | | U/ | 1000 | | U/ | 1000 | | U/ | 1000 |
| Manganese | 3300 - 275 | | UE*/UJ | 10.0 | | UE*/UJ | 10.0 | | EU*/UJ | 10.0 | | EU*/UJ | 10.0 |
| Mercury | | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 | | U/ | 0.20 |
| Nickel | | | U*/UJ | 20.0 | | U*/UJ | 20.0 | | U*/UJ | 20.0 | | U*/UJ | 20.0 |
| Potassium | | | U/ | 100 | 104 | B/ | 100 | | U/ | 100 | | U/ | 100 |
| Selenium | | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 | | U/ | 2.0 |
| Silver | | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 | | U/ | 10.0 |
| Sodium | | | U/ | 2000 | | U/ | 2000 | | U/ | 2000 | | U/ | 2000 |
| Thallium | 2.4 - 0.2 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 | | U/ | 1.0 |
| Vanadium | | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 | | U/ | 20.0 |
| Zinc | | | U/ | 10.0 | | B/U | 10.0 | | U/ | 10.0 | | U/ | 10.0 |

1. All results in ug/L. Dissolved results area from field 0.45 um filtered sample aliquot. Totals were not filtered.
2. LQ/DVQ = Laboratory Qualifier/Data Validation Qualifier Definitions:

**B** This Flag is applied to a value greater than or equal to the instrument detection limit (IDL), but less than the Practical Quantitation Limit. (e.g., used by the EPA to indicate the results is "bracketed" by the ICL and CRDL. This laboratory qualifier does not indicate blank contamination for inorganic analyses.)

**E** Interferences were encountered during the ICP Analysis.

**U** Indicates analyte was analyzed for, but was not detected above the Reported Detection Limit (RDL). If the U flag is in the DVQ position, the analyte was detected in the blank and the result has been qualified as undetected, with the RDL set at the sample concentration.

**Bold** indicates exceedence of low end of Remediation levels

## Table 7. Proposed Sampling Plan -- Upper Aquifer Monitoring Wells

**American Chemical Service, Inc. - NPL Site**

| | Area of Site | Well Identification | Site Location | 1996 August | 1996 October | 1997 Quarter 1st | 1997 Quarter 2nd | 1997 Quarter 3rd | 1997 Quarter 4th | 1998 Quarter 1st | 1998 Quarter 2nd | 1998 Quarter 3rd | 1998 Quarter 4th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | North | MW37 | Downgradient | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 2 | | MW38 | Downgradient | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 3 | | MW39 | Side-gradient | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 4 | East | MW11 | Side-gradient | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 5 | | MW40 | East of site | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 6 | | MW12 | | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 7 | | MW18 | | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 8 | Southeast | MW47 | Downgradient | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 9 | | MW41 | southeast of landfill | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 10 | | MW42 | | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 11 | | MW43 | | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 12 | | MW44 | | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 13 | | MW19 | | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 14 | Southwest | MW15 | Southwest of landfill | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 15 | Wetlands | MW14 | Downgradient | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 16 | | MW46 | in wetland area | TAL/TCL | | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 17 | | MW13 | | | TAL/TCL | TIL | TIL | TAL/TCL | | TIL | | TCL | |
| 18 | Plume Interior | MW48 | North side of site | TAL/TCL | | | | TCL | | | | TCL | |
| 19 | | MW49 | North side of site | TAL/TCL | | | | TCL | | | | TCL | |
| 20 | | MW6 | southeast of landfill | | TAL/TCL | | | TCL | | | | TCL | |
| 21 | | MW45 | southeast of landfill | TAL/TCL | | | | TCL | | | | TCL | |

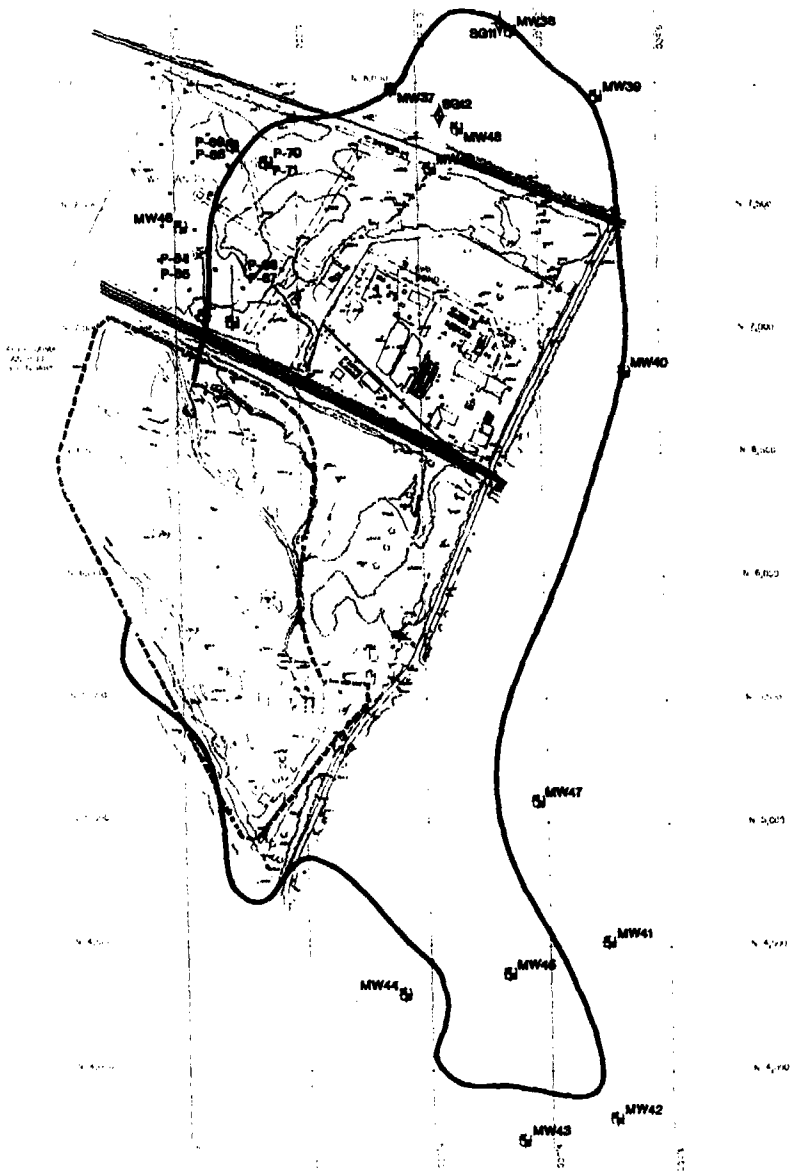
Notes:

TCL Target Compound List (VOCs, SVOCs, pesticides & PCBs)

TAL Target Analyte List (Metals)

TIL Target Indicator List (benzene, chloroethane, ethylbenzene, toluene, xylene, chlorobenzene, 1,2-dichloroethene, and 1,1-dichloroethane)

FIGURES




**LEGEND**

- P-70 — PIEZOMETER LOCATION AND NUMBER
- MW40 — MONITORING WELL LOCATION AND NUMBER
- SG12 — STAFF GAUGE LOCATION AND NUMBER
- TOTAL VOC CONCENTRATIONS GREATER THAN DETECTION LIMITS DELINEATED BY GEOPROBE INVESTIGATION

**NOTES**

1. BASE MAP DEVELOPED FROM AN AERIAL SURVEY MAP OF THE SITE FLOWN ON MARCH 8, 1994 BY GEONEX CHICAGO AERIAL SURVEY, INC. CONTOUR INTERVAL = 2 ft.

north

0 500 1000

SCALE IN FEET

Drawn By CCV

Date

Developed By CAD

Approved By

Reference

Revisions

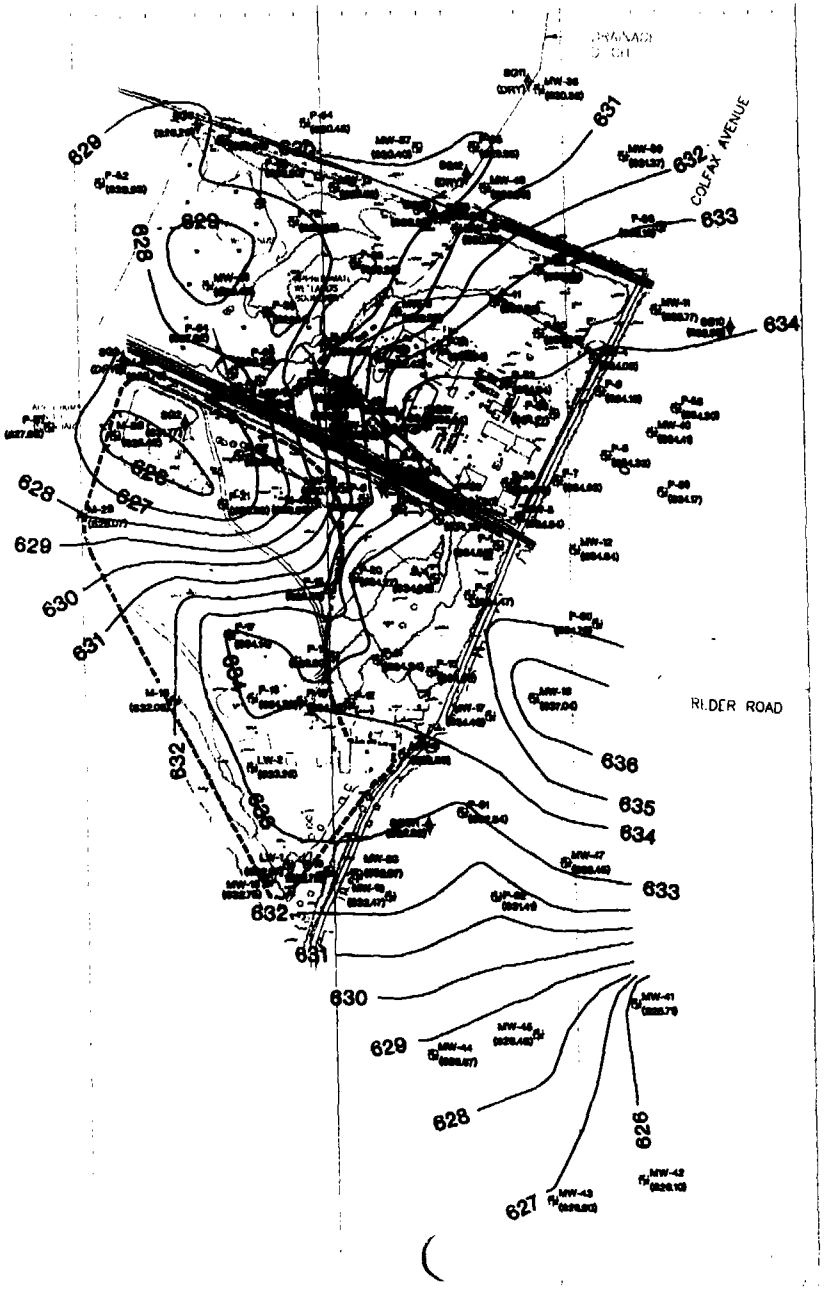
**MONITORING WELL AND PIEZOMETER LOCATION MAP**

UPPER AQUIFER TECHNOLOGY
AMERICAN CHEMICAL SERVICE, INC.
NPL SITE
GRIFFITH, INDIANA

Drawing Number
40/7.0074 B3

MONTGOMERY WATSON

FIGURE 1




**LEGEND**

- MW-12 — UPPER AQUIFER WELL LOCATION AND NUMBER
- M-18 — LEACHATE/UPPER AQUIFER WELL LOCATION AND NUMBER
- P-61 — PIEZOMETER LOCATION AND NUMBER
- SG10 — STAFF GAUGE LOCATION AND NUMBER
- (630.82) — MEASURED WATER TABLE ELEVATION, IN FT. AMSL
- (—) — NOT MEASURED
- 635 — GROUNDWATER ELEVATION CONTOUR

**NOTES**

1. GROUNDWATER LEVELS FOR WATER TABLE CONTOURS WERE MEASURED AT THE SITE ON AUGUST 27, 1996.

north

0 500 1000

SCALE IN FEET

FIGURE 2

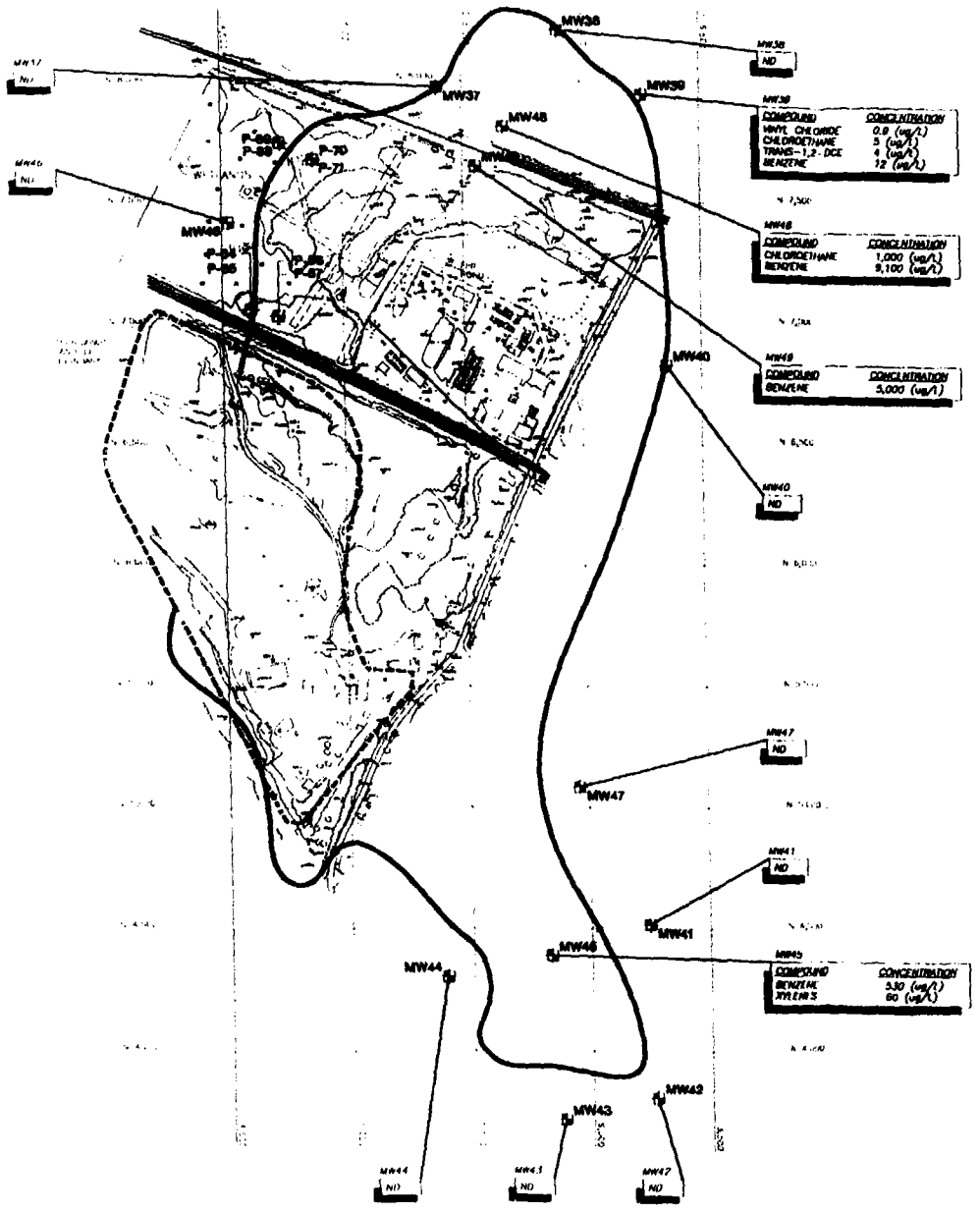
UPPER AQUIFER WATER TABLE ELEVATIONS
AUGUST 27, 1996

UPPER AQUIFER TECH MEMO
AMERICAN CHEMICAL SERVICE, INC
NPL SITE
GRIFFITH, INDIANA

Drawing Number
4077.00/1 B1

MONTGOMERY WATSON

Developed By DAP
Approved By
Reference
Revisions
Drawn By CCV
Date




## LEGEND

P-70 PIEZOMETER LOCATION AND NUMBER

MW40 MONITORING WELL LOCATION AND NUMBER

TOTAL VOC CONCENTRATIONS GREATER THAN DETECTION LIMITS DELINEATED BY GEOPROBE INVESTIGATION

ND VOCs NOT DETECTED ABOVE LABORATORY DETECTION LIMITS

## NOTES

1. BASE MAP DEVELOPED FROM AN AERIAL SURVEY MAP OF THE SITE FLOWN ON MARCH 8, 1994 BY GEONEX CHICAGO AERIAL SURVEY, INC. CONTOUR INTERVAL – 2 ft.

north

0 500 1000

SCALE IN FEET

Developed By DAP

Drawn By CCV

Approved By

Date

Reference

Revisions

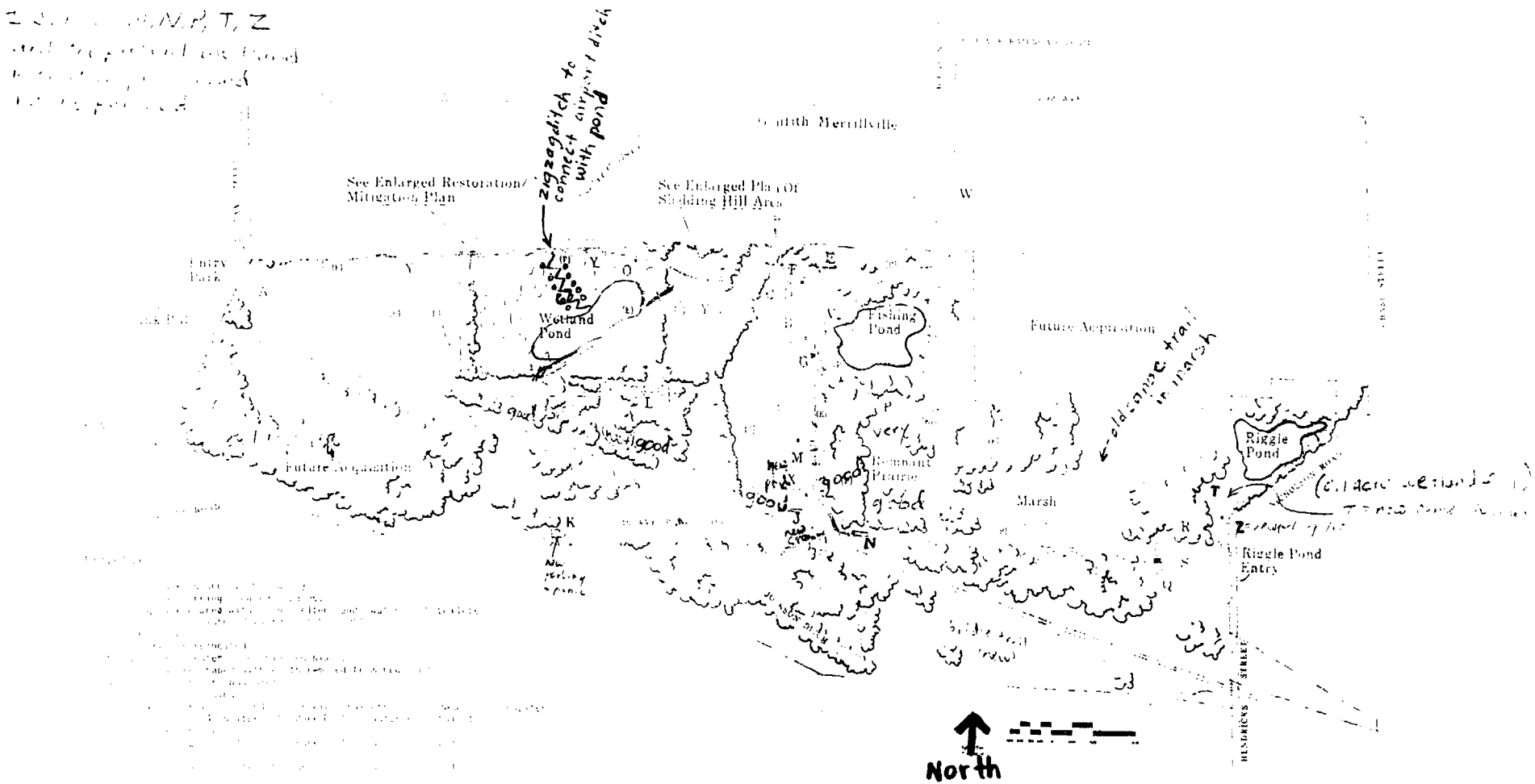
VOCs DETECTED IN MONITORING WELLS

UPPER AQUIFER TECH MEMO
AMERICAN CHEMICAL SERVICE, INC
NPL SITE
GRIFFITH, INDIANA

Drawing Number
40/7.0074 B4

MONTGOMERY WATSON

FIGURE 3



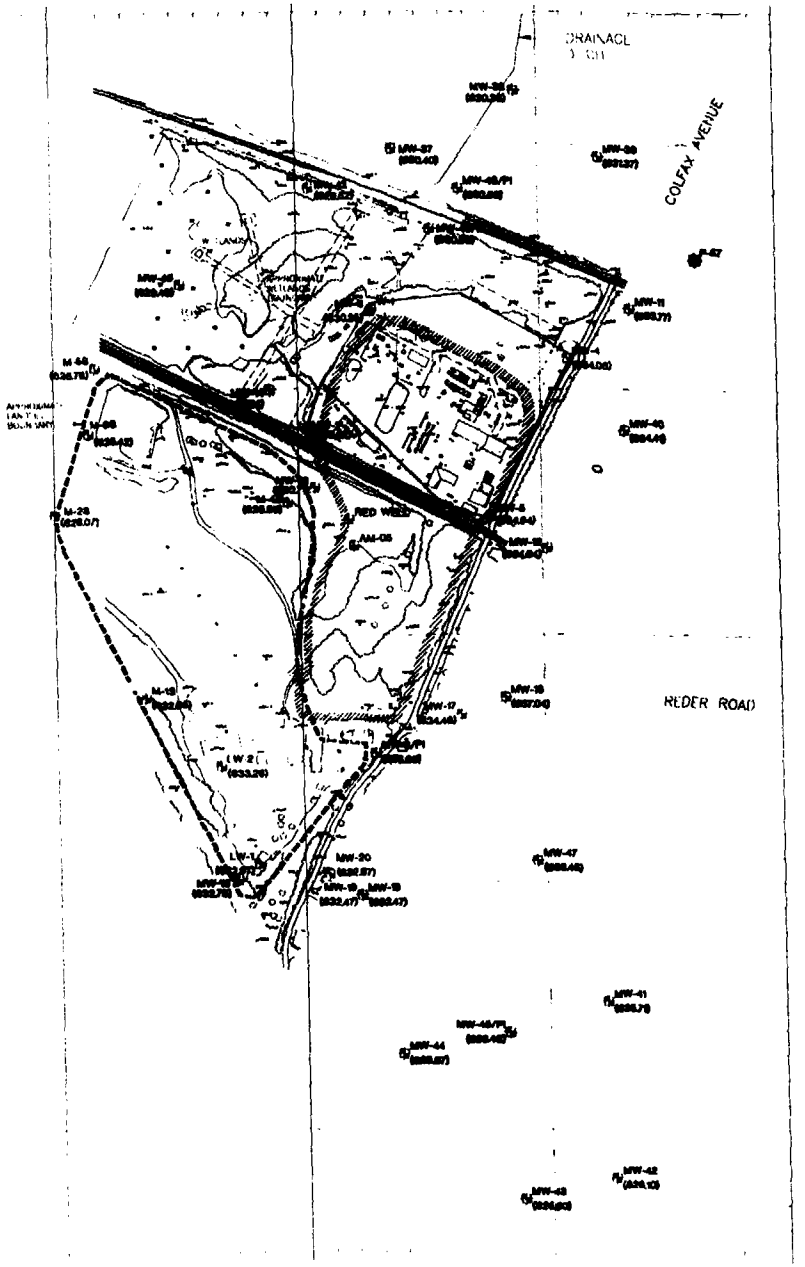

# OAK RIDGE PRAIRIE PARK

LAKE COUNTY PARKS AND RECREATION DEPARTMENT

## SITE PLAN

PROPOSED PARK IMPROVEMENTS

MORRISON PATTMAN and ASSOCIATES INC.
ARCHITECTS 10/15/90




**LEGEND**

- MW-12 — UPPER AQUIFER WELL LOCATION AND NUMBER
- MW-48/P1 — PLUME INTERIOR AQUIFER WELL LOCATION AND NUMBER
- M-16 — LEACHATE/UPPER AQUIFER WELL LOCATION AND NUMBER
- (632.47) — MEASURED WATER LEVEL ELEVATION, IN FT. AMSL
- TOTAL VOC CONCENTRATIONS GREATER THAN DETECTION LIMITS DELINEATED BY GEOPROBE INVESTIGATION
- APPROXIMATE LOCATION OF BARRIER WALL
- P-67 — PROPOSED PIEZOMETER LOCATION AND NUMBER

**NOTES**

1. GROUNDWATER LEVELS FOR WATER TABLE CONTOURS WERE MEASURED AT THE SITE ON AUGUST 27, 1996.

north

0 500 1000

SCALE IN FEET

Developed By KS
Drawn By CCV
Approved By
Date
Reference
Revisions

PROPOSED UPPER AQUIFER PIEZOMETER

UPPER AQUIFER TECH MEMO
AMERICAN CHEMICAL SERVICE
NPL SITE
GRIFFITH, INDIANA

Drawing Number
4077.0074 B5

MONTGOMERY WATSON

FIGURE 4

APPENDICES

A

# A

# SOIL BORING LOGS
# MONITORING WELLS AND PIEZOMETERS

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW37**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **634.0**
Northing: **7976.0**
Easting: **5395.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 20 | M | 6 | | Dark Brown, Sandy, Silty TOPSOIL | | 3.0 | |
| | | | | | | Loose, Yellow-Brown to Light Orange-Brown, Fine to Medium SAND, Little to Some Silt (SM) | | 1.0 | |
| 2 | | 13 | W | 13 | | | | 0.0 | |
| | | | | | | Medium Dense, Light Gray-Brown, Fine to Coarse SAND, Little to Some Silt (SM) | | | |
| 3 | | 15 | W | 10 | 5 | Medium Dense,Light Gray/Brown, Fine to Medium SAND, Little to Some Silt (SM) | | 0.0 | |
| | | | | | | Medium Dense, Light Gray, Fine to Coarse SAND, Little to Some Silt (SM) | | | |
| | | | | | | Medium Dense, Light Gray, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 4 | | 20 | W | 10 | | | | 0.0 | |
| 5 | | 20 | W | 13 | 10 | | | 0.0 | |
| | | | | | | Stiff, Gray, Silty CLAY, Trace Fine Sand (CL) | | | |
| | | | | | | 1" Clay Seam | | | |
| 6 | | 19 | W/M | 13 | | Fine to Coarse SAND, Little Silt (SM) | | 0.0 | |
| | | | | | | 3" CLAY Seam at 13.5 ft | | | |
| | | | | | | Very Stiff, Light Gray, Silty CLAY, Trace Fine to Coarse SAND (CL) | | | |
| 7 | | 12 | M | | 15 | | | 0.0 | |
| | | | | | | End of Boring at 16.0 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/16/96** End **7/16/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW38**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **633.6**
Northing: **8216.0**
Easting: **5903.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 21 | M | 4 | | Black, Sandy, Silty TOPSOIL | | 0.0 | |
| | | | | | | Loose, Brown, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 2 | | 14 | W | 9 | ▽ | | | 0.0 | |
| 3 | | 20 | W | 11 | 5 | Loose, Gray, Fine to Medium SAND, Little to Some Silt, Trace Clay (SM) | | 0.0 | |
| 4 | | 18 | W | 21 | | Medium Dense, Fine to Coarse SAND and GRAVEL, Little to Some Silt (SM/GM) | | 0.0 | |
| 5 | | 12 | W | 5 | 10 | | | 0.0 | |
| | | | | | | Very Stiff, Gray, Silty CLAY, Little to Some, Fine to Coarse Sand (CL) | | | |
| 6 | | 20 | M | 19 | | | | 0.0 | |
| | | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/17/96** End **7/17/96**
Driller **Stearns** Chief **CSY** Rig **CME**
Logger **CSY** Editor **MEV** **850**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW39**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **634.0**
Northing: **7947.0**
Easting: **6253.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 18 | M | 2 | | Dark Brown/Black TOPSOIL | | 0.0 | |
| 2 | | 18 | W | 5 | | Medium Dense, Gray, Fine to Coarse SAND, Trace Gravel (SP) | | 0.0 | |
| 3 | | 18 | W | 9 | 5 | Medium Dense, Gray, Fine to Coarse SAND, Little Gravel (SP) | | | |
| 4 | | 20 | W | 10 | | | | 0.0 | |
| 5 | | | M | 9 | 10 | Medium Dense, Gray, Fine to Coarse SAND, Little Gravel, Little Silt (SP) | | | |
| 6 | | 12 | M | 15 | | Medium Stiff, Gray, Silty CLAY (CL) | | 0.0 | |
| | | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.
Time After Drilling ____
Depth to Water ____
Depth to Cave in ____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/16/96** End **7/16/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **MEV** Editor **CSY**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW40**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **636.6**
Northing: **6831.0**
Easting: **6349.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 18 | M | 3 | | Black, Silty, Fine to Medium, Sandy TOPSOIL | | 0.0 | |
| | | | | | | Loose, Yellow-Brown, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 2 | | 18 | W | 5 | | | | 0.0 | |
| 3 | | 18 | W | 3 | 5 | Loose, Light Gray and Brown, Mottled, Fine to Coarse SAND, Trace Gravel, Little to Some Silt (SM), Broken Shells | | 0.0 | |
| 4 | | 18 | W | 6 | | | | 0.0 | |
| | | | | | | Loose, Light Gray, Fine to Coarse SAND, Little to Some, Fine to Coarse Gravel, Little to Some Silt (SM) | | | |
| 5 | | 10 | W | 9 | 10 | | | 0.0 | |
| | | | | | | Loose, Light Gray, Fine to Coarse SAND, Little to Some Silt (SM) | | | |
| 6 | | 16 | W | 12 | | | | 0.0 | |
| | | | | | | Stiff, Light Gray, Clayey SILT and Silty CLAY Interbedded (CL) | | | |
| 7 | | 10 | M | | 15 | | | | |
| | | | | | | End of Boring at 16.0 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start **7/16/96** End **7/16/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. **MW41**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 629.6
Northing: 4517.0
Easting: 6242.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 18 | M | 6 | | Loose, Dark Brown, Silty, Clayey, Sandy TOPSOIL | | 8.6 | |
| | | | | | Loose, Light Gray, Silty, Fine to Medium SAND, Trace to Little Clay (SM), Lacustrian, Some Bedding Plains Apparent | | | |
| 2 | 22 | M | 2 | | | | 0.0 | |
| 3 | 22 | M | 2 | 5 | (2) 1" Sandy Clay Seams at 6.5' and 6.8' | | | |
| | | | | | Soft, Light Gray, Silty CLAY and Clayey SILT, Little Fine Sand (CL-ML), Plastic, Lacustrian, Some Bedding Apparent | | | |
| 4 | 20 | M | 9 | | | | | |
| 5 | 16 | M | 6 | 10 | | | 0.0 | |
| 6 | | | 14 | | Very Stiff, Light Gray, Silty CLAY, Little Fine to Coarse Sand, Trace Fine Gravel (CL) | | | |
| | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | | Note: MW41 will be placed in this boring. Located approximately 60 ft south of original MW41. | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.

| Time After Drilling | | | | |
|---|---|---|---|---|
| Depth to Water | | | | |
| Depth to Cave in | | | | |

## GENERAL NOTES

Start 7/17/96 End 7/17/96
Driller Stearns Chief CSY Rig CME 850
Logger MEV Editor CSY
Drill Method 4 1/4 ID HSA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project American Chemical Service, Inc.

Location Griffith, Indiana

Boring No. **MW41R1**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | TYPE | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 10 | W | 4 | | Soft to Medium Stiff, Brown Grading to Light Gray, Silty CLAY, Trace Fine Sand (CL) | | | |
| 2 | | 24 | W | 4 | | | | | |
| | | | | | 5 | End of Boring at 5.0 ft | | | |
| | | | | | | Note: Raining hard, unable to use PID, Located 25' north and 25' west of original MW41 location. | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start 7/18/96 End 7/18/96
Driller Stearns Chief CSY Rig CME 850
Logger CSY Editor MEV
Drill Method 4 1/4 ID HSA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW41R2**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 14 | W | 3 | | Medium Stiff, Dark Brown, Silty CLAY, Trace to Little, Fine to Medium Sand (CL) | | | |
| 2 | | 16 | M | 3 | | Medium Stiff, Light Gray with Yellow-Brown Mottling, Silty CLAY, Trace to Little Fine Sand (CL) | | | |
| | | | | | 5 | End of Boring at 5.0 ft<br>Note: Located 25' north and 25' west of MW41R1. | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start **7/18/96** End **7/18/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project American Chemical Service, Inc.

Location Griffith, Indiana

Boring No. **MW41R3**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 12 | M/W | 2 | | Soft, Dark Brown, Silty CLAY, Little Fine to Medium Sand (CL) | | | |
| | | | | | Soft, Light Gray and Yellow-Brown, Silty CLAY, Little Fine to Medium Sand (CL) | | | |
| 2 | 22 | M/W | 2 | | | | | |
| | | | | 5 | End of Boring at 5.0 ft<br>Note: Located 75' north and west, respectively from original MW41 location. | | | |
| | | | | 10 | | | | |
| | | | | 15 | | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start 7/18/96 End 7/18/96
Driller Stearns Chief CSY Rig CME
Logger CSY Editor MEV 850
Drill Method 4 1/4 ID HSA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. MW41R4
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 10 | M/W | 2 | | Soft, Dark Brown, Silty, Clayey TOPSOIL, Little Fine to Medium Sand | | | |
| | | | | | Soft, Light Gray and Yellow-Orange Brown, Silty CLAY, Little Fine to Medium Sand (CL), Lacustrine (Some Bedding Apparent) | | | |
| 2 | 20 | M/W | 4 | | | | | |
| 3 | 19 | M/W | 3 | 5 | | | | |
| | | | | | Very Stiff, Gray, Silty CLAY, Trace to Little, Fine to Coarse Sand, Trace Fine Gravel (CL) | | | |
| 4 | 24 | M | 21 | | | | | |
| | | | | 10 | End of Boring at 10.0 ft<br>Note: Located 75' west of original MW41 boring location. | | | |
| | | | | 15 | | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.

| | | | | |
|---|---|---|---|---|
| Time After Drilling | | | | |
| Depth to Water | | | | |
| Depth to Cave in | | | | |

The stratification lines represent the approximate boundary between soil types and the transition may be gradual

## GENERAL NOTES

Start 7/18/96 End 7/18/96
Driller Stearns Chief CSY Rig CME 850
Logger CSY Editor MEV
Drill Method 4 1/4 ID HSA

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW41R5**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE | | | | | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES | | |
|---|---|---|---|---|---|---|---|---|
| No. | Type | Rec. (in.) | Mois-ture | N Value | Depth (ft.) | | qu (qa) (tsf) | PID (ppm) | Remarks |
| 1 | | 12 | M/W | 6 | | Dark Brown, Silty, Clayey TOPSOIL, Little Sand | | | |
| | | | | | | Soft to Medium Stiff, Gray with Brown Mottling, Silty CLAY (CL) | | | |
| 2 | | 18 | W/M | 4 | | | | | |
| 3 | | 20 | M/W | 1 | 5 | Decreasing Brown Color | | | |
| | | | | | | End of Boring at 7.0 ft | | | |
| | | | | | | Note: Located 90' northwest of MW41R4. | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/18/96** End **7/18/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW41R6**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 22 | M | 4 | | Soft, Dark Brown, Silty, Clayey TOPSOIL, Little Fine to Medium Sand | | | |
| | | | | | | Soft, Orange-Brown, Silty CLAY, Little to Some, Fine to Medium Sand (CL) | | | |
| 2 | | 18 | M/W | 4 | | Soft, Light Brown, Silty CLAY, Little to Some Sand (CL)<br>3" Fine to Medium SAND Seam, Some Silt at 4.2' | | | |
| 3 | | 16 | M/W | 2 | 5 | Thin Bedding Planes Visable | | | |
| 4 | | 20 | M | 18 | | Very Stiff, Gray, Silty CLAY, Trace to Little, Fine to Coarse Sand and Fine Gravel (CL) | | | |
| | | | | | 10 | End of Boring at 10.0 ft<br>Note: Located approximately half way between MW47 and original MW41 location. | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start **7/18/96** End **7/18/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

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**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. **MW41R7**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation
Northing:
Easting:

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 12 | M | 4 | | Medium Dense, Brown/Dark Brown TOPSOIL | | | |
| 2 | 17 | W | 4 | ▽ | Medium Dense, Light Brown/Gray, Silty SAND (SM) | | | |
| 3 | 20 | W | 1 | 5 | Medium Stiff, Light Brown/Gray, Silty CLAY (CL) | | | |
| 4 | 22 | W | 2 | | Medium Stiff, Gray, Silty CLAY, Trace Sand (CL) | | | |
| 5 | 22 | W | 4 | 10 | | | | |
| 6 | 24 | M | 18 | | Medium Stiff, Gray, Silty CLAY (CL) | | | |
| | | | | 15 | End of Boring at 15.0 ft<br>Boring backfilled with 3/4 gravel mix, 1/4 holeplug. Did not set well due to Clay formation. | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start 7/18/96 End 7/18/96
Driller Stearns Chief CSY Rig CME
Logger CSY Editor MEV 850
Drill Method 4 1/4 ID HSA

*The stratification lines represent the approximate boundary between soil types and the transition may be gradual.*

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project American Chemical Service, Inc.

Location Griffith, Indiana

Boring No. **MW42**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 629.3
Northing: 3808.0
Easting: 6264.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 18 | M | 3 | | Dark Brown TOPSOIL | | | |
| 2 | | 18 | M | 2 | | Medium Stiff, Gray, Silty SAND (SM) | | | |
| 3 | | 16 | W | 9 | 5 | | | | |
| 4 | | 12 | W | 4 | | Medium Dense, Gray, Fine to Coarse SAND, Trace Gravel (SP) | | | |
| 5 | | 12 | W | 8 | 10 | | | | |
| 6 | | 18 | W | 8 | | | | | |
| 7 | | 12 | M | 8 | 15 | Stiff, Gray, Silty CLAY (CL) | | | |
| | | | | | 20 | End of Boring at 17.0 ft | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.

| | | | | |
|---|---|---|---|---|
| Time After Drilling | | | | |
| Depth to Water | | | | |
| Depth to Cave in | | | | |

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/17/96 End 7/17/96
Driller Stearns Chief CSY Rig CME
Logger MEV Editor CSY 850
Drill Method 4 1/4 ID HSA

J:\4077\Gint\40770 ID: DETROIT2

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. **MW43**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 630.2
Northing: 3719.0
Easting: 5880.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 20 | M | 4 | | Dark Brown TOPSOIL | | | |
| | | | | | Medium Stiff, Light Brown/Gray, Silty SAND (SM) | | | |
| 2 | 20 | M | 3 | | | | 0.0 | |
| | | | | ▽5 | Medium Dense, Gray, Silty SAND, Some Gravel (SM) | | | |
| 3 | 20 | W | 4 | | Medium Dense, Gray, Fine to Coarse SAND, Little Gravel (SP) | | 0.0 | |
| 4 | 20 | W | 7 | | Medium Dense, Gray, Silty SAND (SM) | | | |
| 5 | 24 | W | 7 | 10 | | | | |
| 6 | 22 | W | 3 | | Medium Dense, Gray, Fine to Coarse SAND (SP) | | 0.0 | |
| 7 | 22 | W | 2 | 15 | | | 0.0 | |
| 8 | | M | 5 | | | | | |
| | | | | | Medium Stiff, Gray, Silty CLAY (CL) | | | |
| | | | | | End of Boring at 20.0 ft | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 5.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start 7/17/96 End 7/17/96
Driller Stearns Chief CSY Rig CME
Logger MEV Editor CSY 850
Drill Method 4 1/4 ID HSA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **MW44**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **630.0**
Northing: **4303.0**
Easting: **5390.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 12 | M | 5 | | Black, Silty, Sandy TOPSOIL | | 0.0 | |
| | | | | | | Loose, Tan, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 2 | | 18 | W | 5 | | Soft to Medium Stiff, Silty CLAY, Little Fine Sand (Plastic) (CL) | | 0.0 | |
| 3 | | 16 | W | 3 | 5 | | | 0.0 | |
| | | | | | | Loose, Light Gray, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 4 | | 19 | M | 7 | | Medium Stiff, Light Gray, Silty CLAY (CL) | | 0.0 | |
| 5 | | 18 | W | 6 | 10 | Loose, Light Gray, Fine to Medium SAND, Little to Some Silt (SM) | | 0.0 | |
| | | | | | | Medium Stiff, Light Gray, Silty CLAY, Trace Fine Sand (CL) | | | |
| 6 | | 20 | M | 12 | | Stiff, Light Gray, Silty CLAY, Trace Fine to Coarse Sand (CL) | | 0.0 | |
| | | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/17/96 End 7/17/96
Driller Stearns Chief CSY Rig CME 850
Logger CSY Editor MEV
Drill Method 4 1/4 ID HSA

J:\4077\Gint\40770 ID: DETROIT2

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. **MW45**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 632.1
Northing: 4388.0
Easting: 5830.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 8 | M | 1 | | Dark Brown/Black TOPSOIL | | | |
| 2 | 18 | W | 4 | | Medium Dense, Gray, Fine to Coarse SAND, Some Gravel (SP) | | | |
| 3 | 18 | W | 6 | 5 | | | | |
| | 12 | W | 4 | | | | | |
| 5 | 18 | W | 11 | 10 | | | | |
| | | | | | Medium Stiff, Gray, Silty CLAY, Trace Gravel (CL) | | | |
| 6 | 12 | M | 12 | | | | | |
| | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/17/96 End 7/17/96
Driller Stearns Chief CSY Rig CME 850
Logger MEV Editor CSY
Drill Method 4 1/4 ID HSA

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. **MW46**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 630.2
Northing: 7424.0
Easting: 4526.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 16 | M | 2 | | Dark Brown TOPSOIL | | 0.0 | |
| | | | | | Medium Dense, Gray, Fine to Coarse SAND, Some Gravel (SP) | | 0.0 | |
| 2 | 12 | W | 5 | | | | 0.0 | |
| 3 | 16 | W | 8 | 5 | | | | |
| | | | | | Medium Dense, Gray, Fine to Coarse SAND, Trace Gravel, Trace Silt (SP) | | 0.0 | |
| 4 | 18 | W | 16 | | | | 0.0 | |
| 5 | 20 | W | 4 | 10 | | | | |
| | | | | | Stiff, Gray, Silty CLAY, Trace Sand and Gravel (CL) | | | |
| 6 | 12 | W | 12 | | | | 0.0 | |
| | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/16/96 End 7/16/96
Driller Stearns Chief CSY Rig CME
Logger MEV Editor CSY 850
Drill Method 4 1/4 ID HSA

J:\4077\Grnt\40770 ID PSDETRT2

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. **MW47**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 637.6
Northing: 5084.0
Easting: 5958.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 16 | M | 2 | | Medium Dense, Brown, Fine to Medium SAND (SP) | | 4.4 | |
| 2 | 18 | M | 5 | ▽ | | | 3.2 | |
| 3 | 20 | W | 4 | 5 | | | 1.6 | |
| | | | | | Medium Dense, Gray, Fine to Medium, Silty SAND (SM) | | | |
| 4 | 18 | W | 7 | | | | 0.0 | |
| | | | | | Medium Dense, Gray, Fine to Medium SAND (SP) | | | |
| 5 | 18 | W | 2 | 10 | | | 0.6 | |
| 6 | 20 | W | 10 | | Medium Stiff, Gray, Silty CLAY (CL) | | 0.0 | |
| | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/17/96 End 7/17/96
Driller Stearns Chief CSY Rig CME
Logger MEV Editor CSY 850
Drill Method 4 1/4 ID HSA

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. MW48
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 632.6
Northing: 7814.0
Easting: 5669.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 20 | M | 1 | | Dark Brown TOPSOIL | | 1.5 | |
| | | | | | Medium Dense, Gray, Fine to Coarse SAND, Some Gravel (SP) | | | |
| 2 | 18 | W | 8 | | | | 70.0 | Strong Odor |
| 3 | 16 | W | 9 | 5 | Medium Dense, Gray, Fine to Coarse SAND, Trace Silt | | | |
| 4 | 24 | W | 18 | | | | | Odor |
| 5 | 24 | W | 11 | 10 | | | 0.3 | |
| 6 | 12 | M | 10 | | Stiff, Gray, Silty CLAY (CL) | | | Slight Odor |
| | | | | 15 | End of Boring at 14.0 ft | | | |
| | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.

| | | | | |
|---|---|---|---|---|
| Time After Drilling | | | | |
| Depth to Water | | | | |
| Depth to Cave in | | | | |

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/16/96 End 7/16/96
Driller Stearns Chief CSY Rig CME 850
Logger MEV Editor CSY
Drill Method 4 1/4 ID HSA

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project American Chemical Service, Inc.

Location Griffith, Indiana

Boring No. **MW49**
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 634.2
Northing: 7650.0
Easting: 5551.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 24 | M | 4 | | Loose, Black, Silty, Sandy TOPSOIL | | 1.0 | |
| | | | | | | Loose, Yellow-Brown, Fine toMedium SAND, Little to Some Silt (SM) | | | |
| | | | | | | Loose, Black, Silty, Sandy TOPSOIL (Burried) | | | |
| | | | | | | Loose, Yellow-Brown to Tan, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 2 | | 12 | W | 4 | | | | 0.0 | |
| | | | | | 5 | | | | |
| 3 | | 20 | W | 8 | | Loose, Light Gray, Fine to Coarse SAND, Little to Some Silt (SM) | | 3.0 | |
| | | | | | | Medium Dense, Light Gray, Fine to Medium SAND, Some Silt (Prodominantly Fine) (SM) | | | |
| 4 | | 19 | W | 22 | | | | 6.0 | |
| | | | | | 10 | | | | |
| 5 | | 18 | W | 15 | | | | 19.0 | |
| | | | | | | Very Stiff, Light Gray, Silty CLAY, Trace Sand (CL) | | | |
| 6 | | 22 | M | 23 | | | | 1.0 | |
| | | | | | 15 | | | | |
| | | | | | | End of Boring at 15.0 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.
Time After Drilling ____ ____ ____ ____
Depth to Water ____ ____ ____ ____
Depth to Cave in ____ ____ ____ ____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start 7/16/96 End 7/16/96
Driller Stearns Chief CSY Rig CME 850
Logger CSY Editor CSY
Drill Method 4 1/4 ID HSA

J:\4077\Gint\40770 ID: DETROIT2

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P64**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **631.1**
Northing: **7065.0**
Easting: **4617.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE | | | | | | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Rec. (in.) | Mois-ture | N Value | Depth (ft.) | | qu (qa) (tsf) | PID (ppm) | Remarks |
| | | | | | | Boring Blind Drilled from 0 to 7.0 ft, See Boring P65 for Geologic Descriptions | | | |
| | | | | | 5 | | | | |
| | | | | | | End of Boring at 7.0 ft | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.
Time After Drilling ____ ____ ____ ____
Depth to Water ____ ____ ____ ____
Depth to Cave in ____ ____ ____ ____

*The stratification lines represent the approximate boundary between soil types and the transition may be gradual.*

## GENERAL NOTES

Start **7/14/96** End **7/14/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **MEV** Editor **CSY**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P65**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **631.2**
Northing: **7063.0**
Easting: **4615.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 16 | M | 2 | | Dark Brown TOPSOIL | | 0.2 | |
| 2 | | 24 | M | 7 | | Medium Dense, Light Brown, Fine to Coarse SAND (SP) | | 0.1 | |
| | | | | | 5 | Medium Dense, Gray, Fine to Coarse SAND, Trace Silt (SP) | | | |
| 3 | | 12 | M | 7 | | | | 0.0 | |
| 4 | | | M | 10 | | Medium Dense, Gray, Silty SAND (SM) | | 0.0 | |
| 5 | | 8 | M | 16 | 10 | | | 0.0 | |
| 6 | | | M | 13 | | Dense, Gray, Silty CLAY, Trace Gravel (CL) | | | |
| | | | | | | End of Boring at 13.0 ft | | | |
| | | | | | 15 | Note: P64 installed adjacent to P65 at water table. Blind drilled to 7.0 ft. | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.

| | | | | |
|---|---|---|---|---|
| Time After Drilling | | | | |
| Depth to Water | | | | |
| Depth to Cave in | | | | |

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/14/96** End **7/14/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **MEV** Editor **CSY**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P66**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **632.1**
Northing: **7034.0**
Easting: **4729.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE | | | | | | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | TYPE | Rec. (in.) | Mois-ture | N Value | Depth (ft.) | | qu (qa) (tsf) | PID (ppm) | Remarks |
| | | | | | | Boring Blind Drilled from 0 to 7.5 ft, See Boring P67 for Geologic Descriptions | | | |
| | | | | | 5 | | | | |
| | | | | | | End of Boring at 7.5 ft | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/15/96** End **7/15/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P67**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **632.0**
Northing: **7034.0**
Easting: **4732.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 18 | M | 3 | | Black, Fine to Medium, Sandy, Silty TOPSOIL | | 0.0 | |
| | | | | | | Very Loose, Light Gray, Fine to Medium SAND, Little to Some Silt (SM) | | | |
| 2 | | 18 | W | 7 | ▽ | Loose, Yellow-Brown, Fine to Medium SAND (Predominantly Fine), Little to Some Silt (SM) | | 0.0 | |
| 3 | | 6 | W | 5 | 5 | Loose, Light Gray, Fine to Medium SAND (Predominantly Fine), Little to Some Silt (SM) | | 0.0 | PID went out, bad battery |
| 4 | | 16 | W | 7 | | Soft, Light Gray, Silty SAND, Some Clay (SC-SM) | | | |
| | | | | | | Loose, Gray, Fine to Coarse SAND, Little to Some Silt (SM) | | | |
| 5 | | 18 | W | 5 | 10 | Loose, Light Gray, Fine to Medium SAND (Predominantly Fine), Little to Some Silt (SM) | | | |
| 6 | | 18 | W | 10 | | Stiff, Light Gray, Silty, Sandy CLAY, Trace Fine Gravel (CL) | | | |
| 7 | | 12 | M | | 15 | | | | |
| | | | | | | End of Boring at 16.0 ft | | | |
| | | | | | | Note: P66 installed adjacent to P67 at water table, Blind Drilled to 7.5 ft | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/15/96** End **7/15/96**
Driller **Stearns** Chief **CSY** Rig **CME**
Logger **CSY** Editor **MEV** **850**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P68**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **630.8**
Northing: **7752.0**
Easting: **4743.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE | | | | | | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | TYPE | Rec. (in.) | Mois-ture | N Value | Depth (ft.) | | qu (qa) (tsf) | PID (ppm) | Remarks |
| | | | | | | Boring Blind Drilled from 0 to 7.0 ft, See Boring P69 for Geologic Descriptions | | | |
| | | | | | 5 | | | | |
| | | | | | | End of Boring at 7.0 ft | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.
Time After Drilling ____ ____ ____ ____
Depth to Water ____ ____ ____ ____
Depth to Cave in ____ ____ ____ ____

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/16/96** End **7/16/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **MEV** Editor **CSY**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P69**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **630.8**
Northing: **7751.0**
Easting: **4741.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 6 | M | 2 | | Dark Brown TOPSOIL | | 2.2 | |
| | | | | | | Medium Dense, Gray, Fine to Coarse SAND, Some Gravel (SP) | | | |
| 2 | | 12 | W | 5 | | | | 1.9 | |
| 3 | | 12 | W | 8 | 5 | Medium Dense, Gray, Fine to Coarse SAND, Trace Silt (SP) | | 4.3 | |
| 4 | | 18 | W | 5 | | | | 0.0 | |
| 5 | | 18 | W | 6 | 10 | Medium Dense, Gray, Fine to Coarse SAND, Trace Gravel and Silt (SP) | | 0.0 | |
| | | | | | | Dense, Gray, Silty CLAY, Trace Gravel (CL) | | | |
| 6 | | 12 | M | 19 | | | | 0.0 | |
| | | | | | 15 | End of Boring at 15.0 ft | | | |
| | | | | | | Note: P68 installed adjacent to P69 at water table. Blind drilled to 7.0 ft. | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ ____ ft. Upon Completion of Drilling ▼ ____ ft.

| Time After Drilling | | | | |
|---|---|---|---|---|
| Depth to Water | | | | |
| Depth to Cave in | | | | |

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/16/96** End **7/16/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **MEV** Editor **CSY**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project **American Chemical Service, Inc.**

Location **Griffith, Indiana**

Boring No. **P70**
Job No. **4077.0075**
Sheet **1 of 1**
Surface Elevation **631.3**
Northing: **7680.0**
Easting: **4880.0**

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE | | | | | | VISUAL CLASSIFICATION and Remarks | SOIL PROPERTIES | | |
|---|---|---|---|---|---|---|---|---|---|
| No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | | qu (qa) (tsf) | PID (ppm) | Remarks |
| | | | | | | Boring Blind Drilled from 0 to 7.5 ft, See Boring P71 for Geologic Descriptions | | | |
| | | | | | 5 | | | | |
| | | | | | | End of Boring at 7.5 ft | | | |
| | | | | | 10 | | | | |
| | | | | | 15 | | | | |
| | | | | | 20 | | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ____ ft.

| | | | | |
|---|---|---|---|---|
| Time After Drilling | | | | |
| Depth to Water | | | | |
| Depth to Cave in | | | | |

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

## GENERAL NOTES

Start **7/16/96** End **7/16/96**
Driller **Stearns** Chief **CSY** Rig **CME 850**
Logger **CSY** Editor **MEV**
Drill Method **4 1/4 ID HSA**

**MONTGOMERY WATSON**

# LOG OF TEST BORING

Project: American Chemical Service, Inc.

Location: Griffith, Indiana

Boring No. P71
Job No. 4077.0075
Sheet 1 of 1
Surface Elevation 631.2
Northing: 7682.0
Easting: 4876.0

41551 Eleven Mile Road, P.O. Box 8012, Novi, MI 48376, TEL. (810) 344-0205

| SAMPLE No. | Type | Rec. (in.) | Moisture | N Value | Depth (ft.) | VISUAL CLASSIFICATION and Remarks | qu (qa) (tsf) | PID (ppm) | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | 16 | M | 2 | | Loose, Black, Fine to Medium, Sandy, Silty TOPSOIL | | 0.0 | |
| 2 | | 16 | W | 11 | ▽ | Medium Dense, Light Gray, Fine to Coarse SAND, Little to Some Silt (SM) | | 0.0 | |
| 3 | | 14 | W | 10 | 5 | | | 0.0 | |
| 4 | | 16 | W | 4 | | Medium Dense, Light Gray, Fine to Medium SAND (Predominantly Fine), Little to Some Silt (SM) | | 0.0 | |
| 5 | | 18 | W | 6 | 10 | 1" to 3" Silty, Sandy CLAY Seams at 10.5' and 11.6' | | 0.0 | |
| 6 | | 22 | W/M | 16 | 15 | Stiff, Light Gray, Silty CLAY, Little Fine Sand, Trace Fine to Medium Gravel (CL) | | 6.0<br>16.0 | |
| | | | | | 20 | End of Boring at 15.0 ft<br>Note: P70 drilled next to P71, blind drilled to 7.5 ft. | | | |

## WATER LEVEL OBSERVATIONS

While Drilling ▽ 3.0 ft. Upon Completion of Drilling ▼ ft.
Time After Drilling
Depth to Water
Depth to Cave in

## GENERAL NOTES

Start 7/16/96 End 7/16/96
Driller Stearns Chief CSY Rig CME 850
Logger CSY Editor MEV
Drill Method 4 1/4 ID HSA

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

B

# B

# WELL CONSTRUCTION INFORMATION
# MONITORING WELLS AND PIEZOMETERS

**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

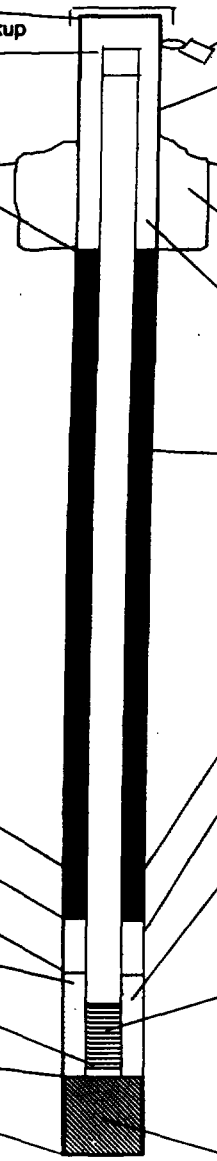
| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>7976.0 ft. ■ N. ☐ S. 5395.0 ft. ■ E. ☐ W. | Well Name<br>MW37 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | C. Yantz - Montgomery Watson<br>J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 637.09 ft. MSL

Well casing top elevation 636.78 ft. MSL

Surface elevation 634.0 ft. MSL

Surface Seal, bottom 632.0 ft. MSL or 2.0 ft.




USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 634.0 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 632.0 | ft. MSL or | 2.0 | ft. |
| Screen joint, top | 631.0 | ft. MSL or | 3.0 | ft. |
| Well bottom | 620.8 | ft. MSL or | 13.3 | ft. |
| Filter pack, bottom | 618.0 | ft. MSL or | 16.0 | ft. |
| Borehole, bottom | 618.0 | ft. MSL or | 16.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above
How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added 3 cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel
Screen type: Factory cut ☐ Continuous slot ■ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.8 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| | |
|---|---|
| Signature | Firm<br>MONTGOMERY WATSON |

J:\4077\qint\MW37-MWC.xls

**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>8216.0 ft. ■ N. ☐ S. 5903.0 ft. ■ E. ☐ W. | Well Name<br>MW38 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/17/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm)<br>C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 636.82 ft. MSL

Well casing top elevation 636.51 ft. MSL

Land surface elevation 633.6 ft. MSL

Surface Seal, bottom 631.6 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 633.6 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 631.6 | ft. MSL or | 2.0 | ft. |
| Screen joint, top | 630.6 | ft. MSL or | 3.0 | ft. |
| Well bottom | 620.4 | ft. MSL or | 13.3 | ft. |
| Filter pack, bottom | 618.6 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 618.6 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above
How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global filter Pack / #7
Volume added 3 cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel
Screen type: Factory cut ☐ Continuous slot ■ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.45 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7947.0 ft. ■ N. ☐ S. 6253.0 ft. ■ E. ☐ W. | Well Name: MW39 |
| Type of Well: Water Table Observation Well ■ Piezometer ☐ | Grid Origin Location: Lat. _____ Long. _____ or St. Plane ft. N, ft. E. | Date Well Installed: 7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | MEV - Montgomery Watson<br>J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 638.16 ft. MSL

Well casing top elevation 637.77 ft. MSL

Land surface elevation 634.0 ft. MSL

Surface Seal, bottom 632.0 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: _____

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 634.0 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 632.0 | ft. MSL or | 2.0 | ft. |
| Screen joint, top | 631.0 | ft. MSL or | 3.0 | ft. |
| Well bottom | 621.0 | ft. MSL or | 13.0 | ft. |
| Filter pack, bottom | 619.0 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 619.0 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
holeplug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson

Slot size: 0.010 in.

Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>■ N. ☐ S. 6831.0 ft.<br>■ E. ☐ W. 6349.0 ft. | Well Name<br>MW40 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | C. Yantz - Montgomery Watson<br>J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 639.79 ft. MSL

Well casing top elevation 639.46 ft. MSL

Land surface elevation 636.6 ft. MSL

Surface Seal, bottom 634.3 ft. MSL or 2.3 ft.

3' stickup

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 636.6 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 634.3 | ft. MSL or | 2.3 | ft. |
| Screen joint, top | 633.6 | ft. MSL or | 3.0 | ft. |
| Well bottom | 623.4 | ft. MSL or | 13.3 | ft. |
| Filter pack, bottom | 620.6 | ft. MSL or | 16.0 | ft. |
| Borehole, bottom | 620.6 | ft. MSL or | 16.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐
Hole plug Other ■

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global filter Pack / #7
Volume added 3.5 cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐
Stainless Steel Other ■

Screen material: Stainless Steel
Screen type: Factory cut ☐ Continuous slot ■ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐
Filter Pack Material Other ■

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

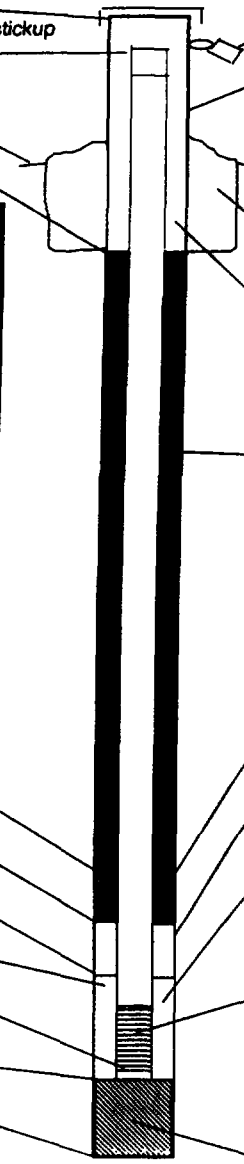
| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>4517.0 ft. ■ N. ☐ S. 6242.0 ft. ■ E. ☐ W. | Well Name<br>MW41 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm)<br>C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 633.07 ft. MSL

Well casing top elevation 632.74 ft. MSL

surface elevation 629.6 ft. MSL

Surface Seal, bottom 627.6 ft. MSL or 2.0 ft.




USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 629.6 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 627.6 | ft. MSL or | 2.0 | ft. |
| Screen joint, top | 626.6 | ft. MSL or | 3.0 | ft. |
| Well bottom | 616.4 | ft. MSL or | 13.3 | ft. |
| Filter pack, bottom | 614.6 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 614.6 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐
Hole plug Other ■

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐
Stainless Steel Other ■

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐
Filter Pack Material Other ■

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>■ N. 3808.0 ft. ☐ S. ■ E. 6264.0 ft. ☐ W. | Well Name<br>MW42 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/17/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm)<br>MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 632.64 ft. MSL

Well casing top elevation 632.32 ft. MSL

Land surface elevation 629.3 ft. MSL

Surface Seal, bottom 627.3 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | DEPTH |
|---|---|---|
| Bentonite seal, top | NA ft. MSL or | NA ft. |
| Fine sand, top | NA ft. MSL or | NA ft. |
| Filter pack, top | NA ft. MSL or | NA ft. |
| Screen joint, top | 625.3 ft. MSL or | 4.0 ft. |
| Well bottom | 615.3 ft. MSL or | 14.0 ft. |
| Filter pack, bottom | 612.3 ft. MSL or | 17.0 ft. |
| Borehole, bottom | 612.3 ft. MSL or | 17.0 ft. |

Borehole, diameter 8.0 in.

O.D. well casing 2.2 in.

I.D. well casing 2.0 in.

Cap and lock? ■ Yes ☐ No

Protective cover pipe: 3 posts around casing
Inside diameter: 4.0 in
Length: 5.0 ft
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐
Hole plug Other ■

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐
Stainless Steel Other ■

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson

Slot size: 0.010 in.

Slotted length: 9.8 ft.

Backfill material (below filter pack): None ☐
Filter Pack Material Other ■

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 3719.0 ft. ■ N. ☐ S. 5880.0 ft. ■ E. ☐ W. | Well Name: MW43 |
| Type of Well: Water Table Observation Well ■ Piezometer ☐ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ft. N, ft. E. | Date Well Installed: 7/17/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 633.88 ft. MSL

Well casing top elevation 633.56 ft. MSL

surface elevation 630.2 ft. MSL

Surface Seal, bottom 628.2 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

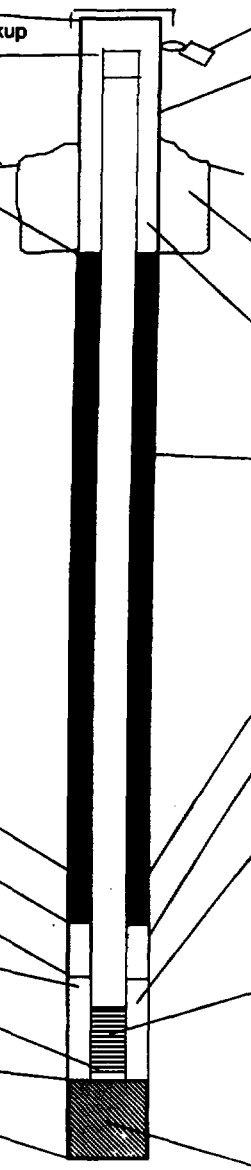
Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 630.2 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 627.2 | ft. MSL or | 3.0 | ft. |
| Screen joint, top | 625.2 | ft. MSL or | 5.0 | ft. |
| Well bottom | 615.2 | ft. MSL or | 15.0 | ft. |
| Filter pack, bottom | 610.2 | ft. MSL or | 20.0 | ft. |
| Borehole, bottom | 610.2 | ft. MSL or | 20.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |




Cap and lock? ■ Yes ☐ No

Protective cover pipe: 3 posts around casing
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe:

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5' bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
____ Lbs/gal mud weight... Bentonite-sand slurry ☐
____ Lbs/gal mud weight..... Bentonite slurry ☐
____ % Bentonite..... Bentonite-cement grout ☐
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added ____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Sch. 40 Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>■ N. 4303.0 ft. ☐ S. 5390.0 ft. ■ E. ☐ W. | Well Name<br>MW44 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/17/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm)<br>C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

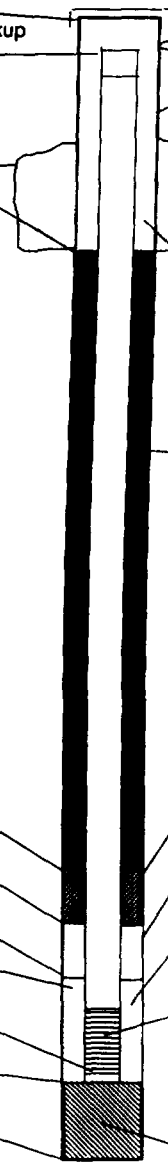
Protective pipe, top elevation 633.36 ft. MSL

Well casing top elevation 633.04 ft. MSL

Land surface elevation 630.1 ft. MSL

Surface Seal, bottom 628.1 ft. MSL or 2.0 ft.

3' stickup



USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 630.1 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 628.1 | ft. MSL or | 2.0 | ft. |
| Screen joint, top | 627.1 | ft. MSL or | 3.0 | ft. |
| Well bottom | 616.9 | ft. MSL or | 13.3 | ft. |
| Filter pack, bottom | 615.1 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 615.1 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in
Length: 5.0
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5' bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added 4 cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel
Screen type: Factory cut ☐ Continuous slot ■ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 4388.0 ft. ■ N. ☐ S. 5830.0 ft. ■ E. ☐ W. | Well Name: MW45 |
| Type of Well: Water Table Observation Well ■ Piezometer ☐ | Grid Origin Location: Lat. _____ Long. _____ or St. Plane ft. N. ft. E. | Date Well Installed: 7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 635.69 ft. MSL

Well casing top elevation 635.35 ft. MSL

Surface elevation 632.1 ft. MSL

Surface Seal, bottom 630.1 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

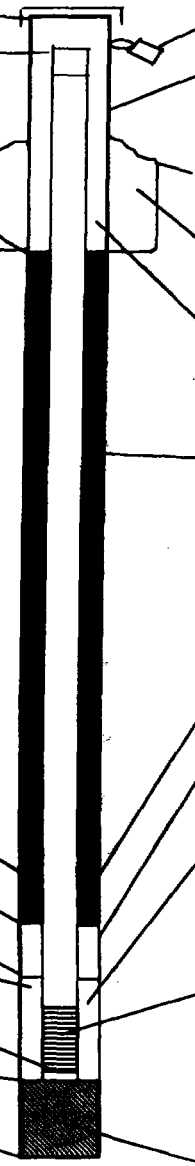
Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith




| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 632.1 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 630.3 | ft. MSL or | 1.8 | ft. |
| Screen joint, top | 629.1 | ft. MSL or | 3.0 | ft. |
| Well bottom | 619.1 | ft. MSL or | 13.0 | ft. |
| Filter pack, bottom | 617.1 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 617.1 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5' bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

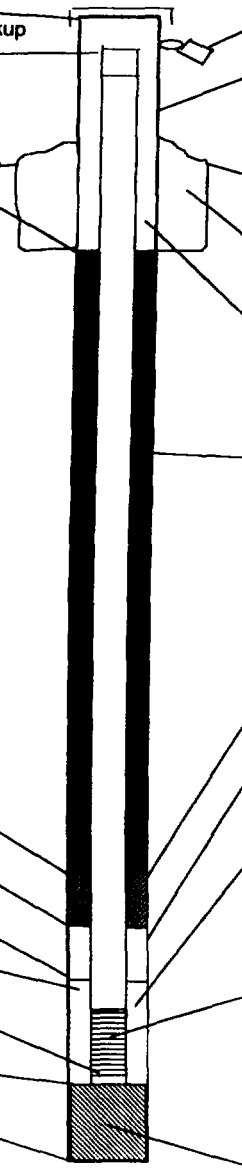
| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>■ N. ☐ S. 7424.0 ft.<br>■ E. ☐ W. 4526.0 ft. | Well Name<br>MW46 |
| Type of Well<br>Water Table Observation Well ■<br>Piezometer ☐ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N. ft. E. | Date Well Installed<br>7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | MEV - Montgomery Watson<br>J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 633.80 ft. MSL

Well casing top elevation 633.32 ft. MSL

Land surface elevation 630.2 ft. MSL

Surface Seal, bottom 628.2 ft. MSL or 2.0 ft.




USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 630.2 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 628.4 | ft. MSL or | 1.8 | ft. |
| Screen joint, top | 627.2 | ft. MSL or | 3.0 | ft. |
| Well bottom | 617.2 | ft. MSL or | 13.0 | ft. |
| Filter pack, bottom | 615.2 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 615.2 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5' bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

MONTGOMERY WATSON

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: ■ N. 5084.0 ft. ☐ S. ■ E. 5958.0 ft. ☐ W. | Well Name: MW47 |
| Type of Well: Water Table Observation Well ■ Piezometer ☐ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ft. N. ft. E. | Date Well Installed: 7/17/96 |
| | Section Location of Waste/Source: ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 640.96 ft. MSL

Well casing top elevation 640.54 ft. MSL

Surface elevation 637.6 ft. MSL

Surface Seal, bottom 635.6 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

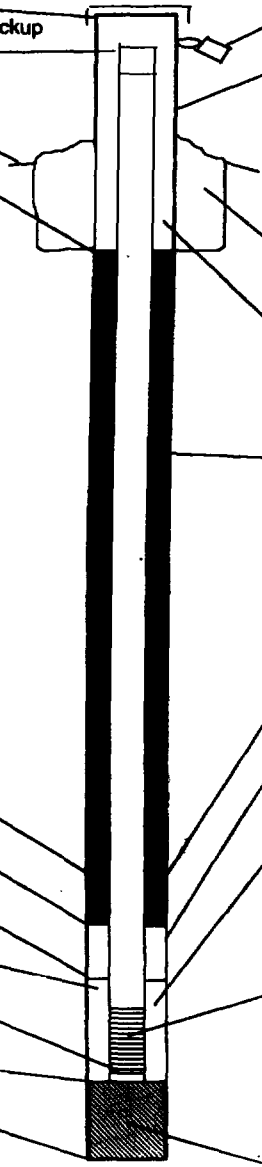
Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 637.6 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 635.8 | ft. MSL or | 1.8 | ft. |
| Screen joint, top | 634.6 | ft. MSL or | 3.0 | ft. |
| Well bottom | 624.6 | ft. MSL or | 13.0 | ft. |
| Filter pack, bottom | 622.6 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 622.6 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |




Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5 bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐
____ Lbs/gal mud weight... Bentonite-sand slurry ☐
____ Lbs/gal mud weight..... Bentonite slurry ☐
____ % Bentonite..... Bentonite-cement grout ☐
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added ____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.98 ft.

Backfill material (below filter pack). None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: ■ N. 7814.0 ft. ☐ S. ■ E. 5669.0 ft. ☐ W. | Well Name: MW48 |
| Type of Well: Water Table Observation Well ■ Piezometer ☐ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ft. N, ft. E. | Date Well Installed: 7/16/96 |
| | Section Location of Waste/Source: ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 636.67 ft. MSL

Well casing top elevation 636.36 ft. MSL

Land surface elevation 632.6 ft. MSL

Surface Seal, bottom 630.6 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

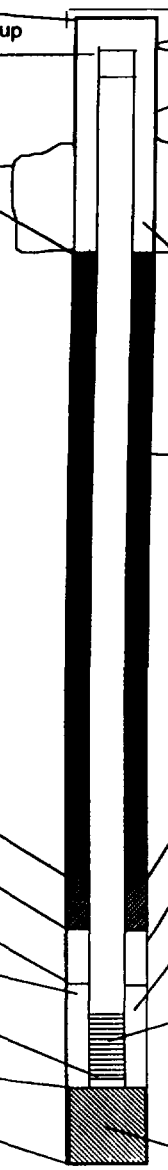
Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 632.6 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 630.5 | ft. MSL or | 2.1 | ft. |
| Screen joint, top | 629.6 | ft. MSL or | 3.0 | ft. |
| Well bottom | 619.6 | ft. MSL or | 13.0 | ft. |
| Filter pack, bottom | 618.6 | ft. MSL or | 14.0 | ft. |
| Borehole, bottom | 618.6 | ft. MSL or | 14.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |




Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5' bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐ Bentonite-sand slurry ☐ Bentonite slurry ☐ Bentonite-cement grout ☐
____ Lbs/gal mud weight...
____ Lbs/gal mud weight.....
____ % Bentonite.....
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added ____ cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7650.0 ft. ■ N. ☐ S. 5551.0 ft. ■ E. ☐ W. | Well Name: MW49 |
| Type of Well: Water Table Observation Well ■ Piezometer ☐ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ft. N, ft. E. | Date Well Installed: 7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | C. Yantz - Montgomery Watson<br>J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation 637.35 ft. MSL

Well casing top elevation 637.00 ft. MSL

Ground surface elevation 634.2 ft. MSL

Surface Seal, bottom 632.2 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 634.2 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 632.2 | ft. MSL or | 2.0 | ft. |
| Screen joint, top | 631.2 | ft. MSL or | 3.0 | ft. |
| Well bottom | 621.0 | ft. MSL or | 13.3 | ft. |
| Filter pack, bottom | 619.2 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 619.2 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ■ Yes ☐ No

Protective cover pipe:
Inside diameter: 4.0 in.
Length: 5.0 ft.
Material: Steel ■ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐
Redi-Mix at 1.5' bgs

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐

Annular space seal: Granular Bentonite ☐ Bentonite-sand slurry ☐ Bentonite slurry ☐ Bentonite-cement grout ☐
____ Lbs/gal mud weight...
____ Lbs/gal mud weight.....
____ % Bentonite.....
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added 3 cu ft

Well casing: Flush threaded PVC schedule 40 ☐ Flush threaded PVC schedule 80 ☐ Other ■
Stainless Steel

Screen material: Stainless Steel

Screen type: Factory cut ☐ Continuous slot ■ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 9.95 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>7065.0 ft. ■ N. ☐ S. 4617.0 ft. ■ E. ☐ W. | Well Name<br>P64 |
| Type of Well<br>Water Table Observation Well ☐<br>Piezometer ■ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N, ft. E. | Date Well Installed<br>7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm)<br>MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation NA ft. MSL

Well casing top elevation 634.87 ft. MSL

Land surface elevation 631.1 ft. MSL

Surface Seal, bottom _____ ft. MSL or _____ ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ☐ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 631.1 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 630.1 | ft. MSL or | 1.0 | ft. |
| Screen joint, top | 629.1 | ft. MSL or | 2.0 | ft. |
| Well bottom | 624.1 | ft. MSL or | 7.0 | ft. |
| Filter pack, bottom | 624.1 | ft. MSL or | 7.0 | ft. |
| Borehole, bottom | 624.1 | ft. MSL or | 7.0 | ft. |

Borehole, diameter 8.0 in.

O.D. well casing 2.2 in.

I.D. well casing 2.0 in.

Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: _____ in
Length: _____ ft
Material: Steel ☐ Other ☐
NA
Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ■ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC

Screen type: Factory cut ■ Continuous slot ☐ Other ☐

Manufacturer Johnson

Slot size: 0.010 in.

Slotted length: 4.35 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7063.0 ft. ■ N. ☐ S. 4615.0 ft. ■ E. ☐ W. | Well Name: P65 |
| Type of Well: Water Table Observation Well ☐ Piezometer ■ | Grid Origin Location: Lat. _____ Long. _____ or St. Plane ft. N. ft. E. | Date Well Installed: 7/14/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation NA ft. MSL

Well casing top elevation 634.77 ft. MSL

Ground surface elevation 631.2 ft. MSL

Surface Seal, bottom 629.2 ft. MSL or 2.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

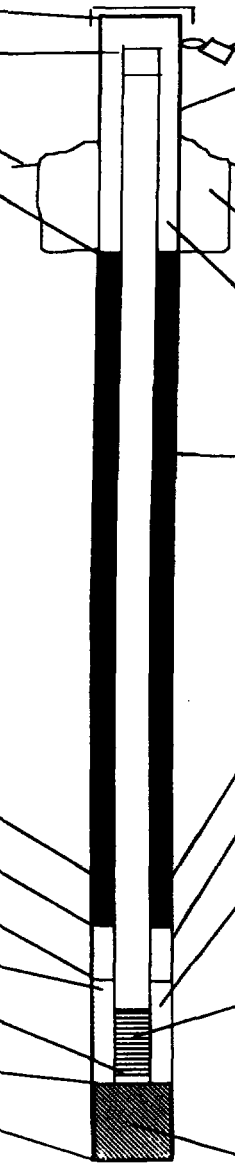
Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 630.7 | ft. MSL or | 0.5 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 627.2 | ft. MSL or | 4.0 | ft. |
| Screen joint, top | 622.2 | ft. MSL or | 6.0 | ft. |
| Well bottom | 620.2 | ft. MSL or | 11.0 | ft. |
| Filter pack, bottom | 619.7 | ft. MSL or | 11.5 | ft. |
| Borehole, bottom | 618.2 | ft. MSL or | 13.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.2 | in. | | |
| I.D. well casing | 2.0 | in. | | |



Cap and lock? ☐ Yes ☐ No

Protective cover pipe:
Inside diameter: _____ in.
Length: _____ ft.
Material: Steel ☐ Other ☐
NA

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC

Screen type: Factory cut ■ Continuous slot ☐ Other ☐

Manufacturer Johnson

Slot size: 0.010 in.

Slotted length: 2 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7034.0 ft. ■ N. ☐ S. 4729.0 ft. ■ E. ☐ W. | Well Name: P66 |
| Type of Well: Water Table Observation Well ☐ Piezometer ■ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ft. N, ft. E. | Date Well Installed: 7/15/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation NA ft. MSL

Well casing top elevation 636.02 ft. MSL

Land surface elevation 632.1 ft. MSL

Surface Seal, bottom 631.1 ft. MSL or 1.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ☐

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 632.1 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 631.1 | ft. MSL or | 1.0 | ft. |
| Screen joint, top | 630.1 | ft. MSL or | 2.0 | ft. |
| Well bottom | 625.1 | ft. MSL or | 7.0 | ft. |
| Filter pack, bottom | 624.6 | ft. MSL or | 7.5 | ft. |
| Borehole, bottom | 624.6 | ft. MSL or | 7.5 | ft. |

Borehole, diameter 8.0 in.

O.D. well casing 2.4 in.

I.D. well casing 2.0 in.

Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: ____ in.
Length: ____
Material: Steel ☐ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐ Bentonite-sand slurry ☐ Bentonite slurry ☐ Bentonite-cement grout ☐
____ Lbs/gal mud weight...
____ Lbs/gal mud weight.....
____ % Bentonite.....
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ☐

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole Plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added 2.5 cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC
Screen type: Factory cut ■ Continuous slot ☐ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 4.35 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7034.0 ft. ■ N. ☐ S. 4732.0 ft. ■ E. ☐ W. | Well Name: P67 |
| Type of Well: Water Table Observation Well ☐ Piezometer ■ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ____ ft. N, ____ ft. E. | Date Well Installed: 7/15/96 |
| | Section Location of Waste/Source: ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | R. Bennett - Stearns Drilling Co. |

Protective pipe, top elevation: NA ft. MSL

Well casing top elevation: 636.06 ft. MSL

Surface elevation: 632.0 ft. MSL

Surface Seal, bottom: 631.5 ft. MSL or 0.5 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ■

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 623.5 | ft. MSL or | 8.5 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 622.4 | ft. MSL or | 9.6 | ft. |
| Screen joint, top | 621.0 | ft. MSL or | 11.0 | ft. |
| Well bottom | 618.5 | ft. MSL or | 13.5 | ft. |
| Filter pack, bottom | 616.0 | ft. MSL or | 16.0 | ft. |
| Borehole, bottom | 616.0 | ft. MSL or | 16.0 | ft. |

Borehole, diameter 8.0 in.

O.D. well casing 2.4 in.

I.D. well casing 2.0 in.

Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: ____ in.
Length: ____ ft.
Material: Steel ☐ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐ Bentonite-sand slurry ☐ Bentonite slurry ☐ Bentonite-cement grout ☐
____ Lbs/gal mud weight...
____ Lbs/gal mud weight.....
____ % Bentonite.....
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ■

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole Plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added 1.5 cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC
Screen type: Factory cut ■ Continuous slot ☐ Other ☐

Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 2 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

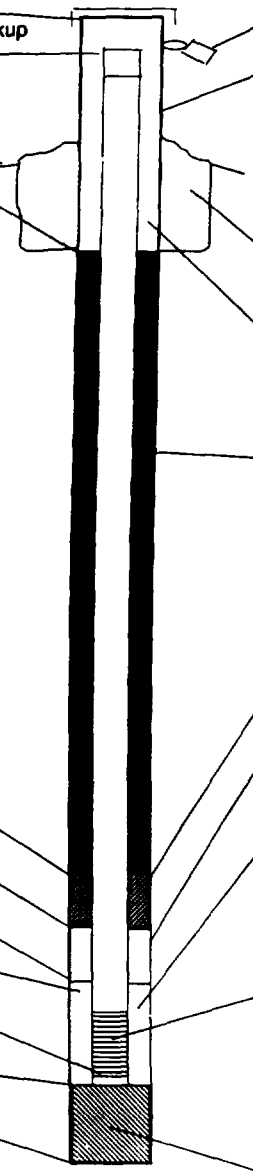
| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: ■ N. 7752.0 ft. ☐ S. ■ E. 4743.0 ft. ☐ W. | Well Name: P68 |
| Type of Well: Water Table Observation Well ☐ Piezometer ■ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ____ ft. N, ____ ft. E. | Date Well Installed: 7/15/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | MEV - Montgomery Watson<br>R. Bennett - Stearns Drilling Co. |

Protective pipe, top elevation: NA ft. MSL

Well casing top elevation: 634.48 ft. MSL

Land surface elevation: 630.8 ft. MSL

Surface Seal, bottom: 630.3 ft. MSL or 0.5 ft.




USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ■

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 630.8 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 629.8 | ft. MSL or | 1.0 | ft. |
| Screen joint, top | 628.8 | ft. MSL or | 2.0 | ft. |
| Well bottom | 623.8 | ft. MSL or | 7.0 | ft. |
| Filter pack, bottom | 623.8 | ft. MSL or | 7.0 | ft. |
| Borehole, bottom | 623.8 | ft. MSL or | 7.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.4 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: NA
Length: ____
Material: Steel ☐ Other ☐
NA
Additional protection? ☐ Yes ☐ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐ Bentonite-sand slurry ☐ Bentonite slurry ☐ Bentonite-cement grout ☐
____ Lbs/gal mud weight...
____ Lbs/gal mud weight.....
____ % Bentonite.....
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ■

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole Plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added ____ cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC

Screen type: Factory cut ■ Continuous slot ☐ Other ☐

Manufacturer: Johnson

Slot size: 0.010 in.

Slotted length: 4.35 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

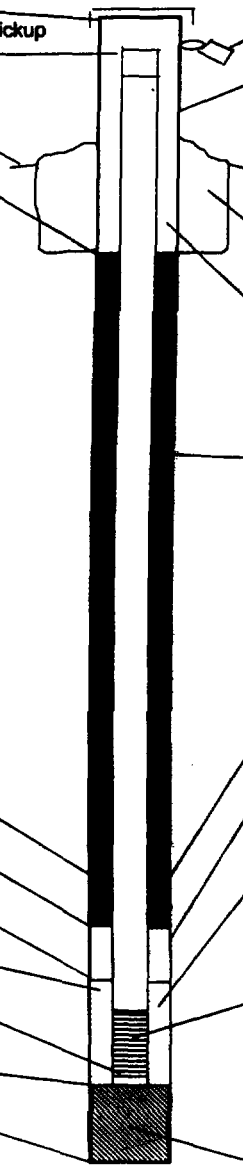
| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7751.0 ft. ■ N. ☐ S. 4741.0 ft. ■ E. ☐ W. | Well Name: P69 |
| Type of Well: Water Table Observation Well ☐ Piezometer ■ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ____ ft. N. ____ ft. E. | Date Well Installed: 7/16/96 |
| | Section Location of Waste/Source: ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) MEV - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | R. Bennett - Stearns Drilling Co. |

Protective pipe, top elevation: NA ft. MSL

Well casing top elevation: 634.66 ft. MSL

Ground surface elevation: 630.8 ft. MSL

Surface Seal, bottom: 630.3 ft. MSL or 0.5 ft.




USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ■

Drilling additives used? ☐ Yes ■ No

Describe ____

Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 624.0 | ft. MSL or | 6.8 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 622.8 | ft. MSL or | 8.0 | ft. |
| Screen joint, top | 620.8 | ft. MSL or | 10.0 | ft. |
| Well bottom | 618.3 | ft. MSL or | 12.5 | ft. |
| Filter pack, bottom | 615.8 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 615.8 | ft. MSL or | 15.0 | ft. |

Borehole, diameter: 8.0 in.

O.D. well casing: 2.4 in.

I.D. well casing: 2.0 in.

Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: NA in.
Length: ____ ft.
Material: Steel ☐ Other ☐
NA
Additional protection? ☐ Yes ☐ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐
____ Lbs/gal mud weight... Bentonite-sand slurry ☐
____ Lbs/gal mud weight..... Bentonite slurry ☐
____ % Bentonite..... Bentonite-cement grout ☐
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ■

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in.
Hole Plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added ____ cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC
Screen type: Factory cut ■ Continuous slot ☐ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 2.5 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

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**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name: American Chemical Service, Inc. | Local Grid Location of Well: 7680.0 ft. ■ N. ☐ S. 4880.0 ft. ■ E. ☐ W. | Well Name: P70 |
| Type of Well: Water Table Observation Well ☐ Piezometer ■ | Grid Origin Location: Lat. ____ Long. ____ or St. Plane ft. N, ft. E. | Date Well Installed: 7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm) C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary: NA ft. | Location of Well Relative to Waste/Source: ☐ Upgradient ☐ Sidegradient ☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation NA ft. MSL

Well casing top elevation 635.38 ft. MSL

Land surface elevation 631.3 ft. MSL

Surface Seal, bottom 630.3 ft. MSL or 1.0 ft.

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ■

Drilling additives used? ☐ Yes ■ No

Describe ____

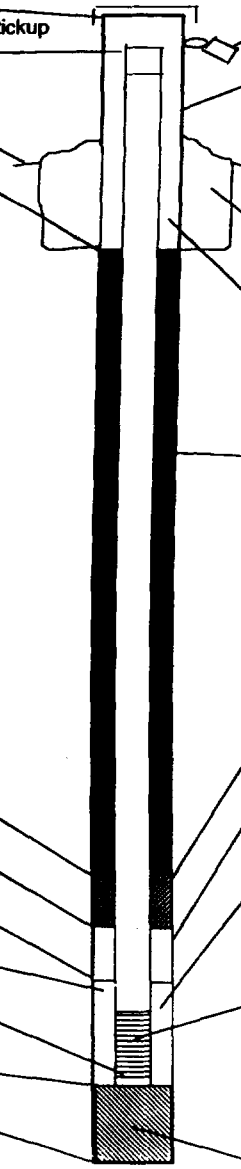
Source of water: City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 631.3 | ft. MSL or | 0.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 630.3 | ft. MSL or | 1.0 | ft. |
| Screen joint, top | 629.3 | ft. MSL or | 2.0 | ft. |
| Well bottom | 624.3 | ft. MSL or | 7.0 | ft. |
| Filter pack, bottom | 623.8 | ft. MSL or | 7.5 | ft. |
| Borehole, bottom | 623.8 | ft. MSL or | 7.5 | ft. |

Borehole, diameter 8.0 in.

O.D. well casing 2.4 in.

I.D. well casing 2.0 in.




Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: NA in.
Length:
Material: Steel ☐ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: ____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe: Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐
____ Lbs/gal mud weight... Bentonite-sand slurry ☐
____ Lbs/gal mud weight..... Bentonite slurry ☐
____ % Bentonite..... Bentonite-cement grout ☐
____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ■

Bentonite seal: Bentonite granules ■ Bentonite pellets ☐ Other ☐
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Hole Plug

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added ____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added ____ cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC
Screen type: Factory cut ■ Continuous slot ☐ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 4.35 ft.

Backfill material: (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

**MONTGOMERY WATSON**

# STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 4077.0075

| | | |
|---|---|---|
| Facility/Project Name<br>American Chemical Service, Inc. | Local Grid Location of Well<br>7682.0 ft. ■ N. ☐ S. 4876.0 ft. ■ E. ☐ W. | Well Name<br>P71 |
| Type of Well<br>Water Table Observation Well ☐<br>Piezometer ■ | Grid Origin Location<br>Lat. _____ Long. _____ or<br>St. Plane ft. N. ft. E. | Date Well Installed<br>7/16/96 |
| | Section Location of Waste/Source ☐ E. ☐ W. | Well Installed By: (Person's Name and Firm)<br>C. Yantz - Montgomery Watson |
| Distance Well Is From Waste/Source Boundary<br>NA ft. | Location of Well Relative to Waste/Source<br>☐ Upgradient ☐ Sidegradient<br>☐ Downgradient ☐ Not Known | J. Huntoon - Stearns Drilling Co. |

Protective pipe, top elevation NA ft. MSL

Well casing top elevation 635.32 ft. MSL

Surface elevation 631.2 ft. MSL

Surface Seal, bottom 630.7 ft. MSL or 0.5 ft.

4' stickup

USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

Sieve analysis attached? ☐ Yes ■ No

Drilling method used: Rotary ☐ Hollow Stem Auger ■ Other ☐
4.25"

Drilling fluid used: Water ☐ Air ☐ Drilling Mud ☐ None ■

Drilling additives used? ☐ Yes ■ No

Describe _____

Source of water:
City of Griffith

| | ELEVATION | | DEPTH | |
|---|---|---|---|---|
| Bentonite seal, top | 624.2 | ft. MSL or | 7.0 | ft. |
| Fine sand, top | NA | ft. MSL or | NA | ft. |
| Filter pack, top | 623.2 | ft. MSL or | 8.0 | ft. |
| Screen joint, top | 621.2 | ft. MSL or | 10.0 | ft. |
| Well bottom | 618.7 | ft. MSL or | 12.5 | ft. |
| Filter pack, bottom | 616.2 | ft. MSL or | 15.0 | ft. |
| Borehole, bottom | 616.2 | ft. MSL or | 15.0 | ft. |
| Borehole, diameter | 8.0 | in. | | |
| O.D. well casing | 2.4 | in. | | |
| I.D. well casing | 2.0 | in. | | |

Cap and lock? ☐ Yes ■ No

Protective cover pipe:
Inside diameter: NA in.
Length: _____ ft.
Material: Steel ☐ Other ☐

Additional protection? ☐ Yes ■ No
If yes, describe: _____

Surface seal: Bentonite ■ Concrete ☐ Other ☐

Material between well casing and protective pipe:
Bentonite ☐ Annular space seal ☐ Other ☐
NA

Annular space seal: Granular Bentonite ☐
_____ Lbs/gal mud weight... Bentonite-sand slurry ☐
_____ Lbs/gal mud weight..... Bentonite slurry ☐
_____ % Bentonite..... Bentonite-cement grout ☐
_____ cu ft volume added for any of the above

How installed: Tremie ☐ Tremie pumped ☐ Gravity ■

Bentonite seal: Bentonite granules ■
☐ 1/4 in. ■ 3/8 in. ☐ 1/2 in. Bentonite pellets ☐
Hole Plug Other ☐

Fine sand material: Manufacturer, product name & mesh size
NA
Volume added _____ cu ft

Filter pack material: Manufacturer, product name & mesh size
Global Drilling Supplies / Global Filter Pack / #7
Volume added 1.5 cu ft

Well casing: Flush threaded PVC schedule 40 ■ Flush threaded PVC schedule 80 ☐ Other ☐

Screen material: Sch 40 PVC
Screen type: Factory cut ■ Continuous slot ☐ Other ☐
Manufacturer Johnson
Slot size: 0.010 in.
Slotted length: 2.5 ft.

Backfill material (below filter pack): None ☐ Other ■
Filter Pack Material

I hereby certify that the information on this form is true and correct to the best of my knowlege.

| Signature | Firm |
|---|---|
| | MONTGOMERY WATSON |

# C

# MONITORING WELL DEVELOPMENT DATA

**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

Project Name: American Chemical Service, Inc. | Well No.: MW37
Location: Griffith, Indiana | Project No.: 4077.0075
Developed By: Cliff Yantz | Checked By:

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well: 13 min.

4. Total well depth (TOC) (From well construction summary): 16.3 ft.

Measured well depth (Before): 15.5 ft.

Measured well depth (After): 16.3 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 11.5 gal.

Volume of water removed from well: 84.0 gal.

Relative recovery rate: 7 gal. per 1 min.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.62 ft. | 4.00 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | 7 / 19 / 96 (mm dd yy) |
| Time: | c. 9 : 09 ■ a.m. ☐ p.m. | 9 : 97 ■ a.m. ☐ p.m. |
| 11 Sediment in well bottom: | 8.0 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Gray | Clear |
| Odor | | |
| Turbidity | Very | Slight |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.68

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | (BEFORE) | (AFTER) |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l | _____ mg/l |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 9:34 | 12 | 7.6 | 610 | 15 | | Gray | None | 77 | |
| 9:36 | 24 | 7.5 | 580 | 14 | | Lt Gray | None | 61 | |
| 9:38 | 36 | 7.6 | 560 | 14 | | Cloudy | None | 21 | |
| 9:40 | 48 | 7.6 | 560 | 14 | | Cloudy | None | 11 | |
| 9:41 | 60 | 7.6 | 550 | 14 | | Clear | None | 7 | |
| 9:43 | 72 | 7.5 | 550 | 14 | | Clear | None | 5 | |
| 9:45 | 84 | 7.5 | 540 | 14 | | Clear | None | 3 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW38 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | Cliff Yantz | Checked By | |

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 15 min.

4. Total well depth (TOC) 16.3 ft.
(From well construction summary)

Measured well depth (Before) 16.0 ft.

Measured well depth (After) 16.3 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 11.4 gal.

Volume of water removed from well 120.0 gal.

Relative recovery rate 9 gal. per 1 min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.97 ft. | 4.10 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | 7 / 19 / 96 (mm dd yy) |
| Time: | c. 7 : 08 ■ a.m. ☐ p.m. | 7 : 47 ■ a.m. ☐ p.m. |
| 11 Sediment in well bottom: | 2.0 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Gray | Clear |
| Odor | Musty | Musty |
| Turbidity | Very | – |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.0

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.33

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 7:33 | 12 | 7.6 | 610 | 15 | | Gray | None | 77 | |
| 7:35 | 24 | 7.5 | 580 | 14 | | Lt Gray | None | 61 | |
| 7:36 | 36 | 7.6 | 560 | 14 | | Cloudy | None | 21 | |
| 7:37 | 48 | 7.6 | 560 | 14 | | Cloudy | None | 11 | |
| 9:41 | 60 | 7.6 | 550 | 14 | | Clear | None | 7 | |
| 9:43 | 72 | 7.5 | 550 | 14 | | Clear | None | 5 | |
| 9:45 | 84 | 7.5 | 540 | 14 | | Clear | None | 3 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW39 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | Cliff Yantz | Checked By | |

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 30 min.

4. Total well depth (TOC) 17.0 ft.
(From well construction summary)

Measured well depth (Before) 16.6 ft.

Measured well depth (After) 17.0 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 11.5 gal.

Volume of water removed from well 120.0 gal.

Relative recovery rate 2.5 gal. per. 1 min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.98 ft. | 4.08 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | 7 / 19 / 96 (mm dd yy) |
| Time: | c. 7 : 58 ■ a.m. ☐ p.m. | 8 : 55 ■ a.m. ☐ p.m. |
| 11 Sediment in well bottom: | 4.0 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Gray | Clear |
| Odor | H2S | H2S |
| Turbidity | Very | – |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 13.02

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 8:26 | 12 | 7.8 | 1100 | 16 | | Gray | Musty | 71 | |
| 8:31 | 24 | 7.9 | 1100 | 15 | | | Musty | 99 | |
| 8:36 | 36 | 8.0 | 1100 | 15 | | Lt Gray | Musty | 14 | |
| 8:41 | 48 | 8.0 | 1100 | 15 | | Clear | Musty | 2 | |
| 8:46 | 60 | 7.9 | 1100 | 14 | | Clear | Musty | 2 | |
| 8:51 | 72 | 8.0 | 1100 | 14 | | Clear | Musty | 0 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

Project Name: American Chemical Service, Inc. | Well No.: MW40
Location: Griffith, Indiana | Project No.: 4077.0075
Developed By: Cliff Yantz | Checked By:

'an this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well: 28 min.

4. Total well depth (TOC) (from well construction summary): 16.0 ft.

Measured well depth (Before): 16.0 ft.

Measured well depth (After): 16.3 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 11.5 gal.

olume of water removed from well: 79.0 gal.

Relative recovery rate: 2.5 gal. per 1 min.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.13 ft. | 3.41 ft. |
| Date: | b. 6 / 19 / 96 (mm dd yy) ■ a.m. | 6 / 19 / 96 (mm dd yy) ■ a.m. |
| Time: | c. 5 : 50 ☐ p.m. | 6 : 40 ☐ p.m. |
| 11 Sediment in well bottom: | 3.0 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Gray | Clear |
| Odor | Musty | Musty |
| Turbidity | Turbid | Clear |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.87

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | (BEFORE) | (AFTER) |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l | _____ mg/l |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 6:17 | 12 | 7.1 | 490 | 16 | | Gray | Musty | 41 | |
| 6:21 | 24 | 7.7 | 420 | 15 | | Gray | Musty | 99 | |
| 6:27 | 36 | 7.7 | 400 | 16 | | Lt Gray | Musty | 28 | |
| 6:30 | 48 | 7.7 | 400 | 15 | | Clear | Musty | 8 | |
| 6:34 | 60 | 7.7 | 390 | 15 | | Clear | Musty | 4 | |
| 6:37 | 72 | 7.7 | 390 | 15 | | Clear | Musty | 3 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW41 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | MEV | Checked By | |

Can this well be purged dry? ■ Yes ☐ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ☐
- surged with block and bailed ■
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 40 min.

4. Total well depth (TOC) 13.3 ft.
(From well construction summary)

Measured well depth (Before) ___ ft.

Measured well depth (After) 13.3 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 12.7 gal.

Volume of water removed from well 60.0 gal.

Relative recovery rate _____ gal. per _____ min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 4.30 ft. | 3.41 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | 7 / 19 / 96 (mm dd yy) |
| Time: | c. 9 : 00 ■ a.m. ☐ p.m. | 9 : 40 ■ a.m. ☐ p.m. |
| 11 Sediment in well bottom: | ___ inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Brown | Semi-turbid |
| Odor | None | None |
| Turbidity | Turbid | Semi-turbid |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.68

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 9:46 | 12 | 6.8 | 515 | 17 | | Semi-Clear | | 999 | |
| 10:45 | 12 | 6.9 | 321 | 17.8 | | Lt. Brown | | 999 | |
| 1:30 | 12 | 7.0 | 587 | 16.1 | | Lt. Brown | | 999 | |
| 1:45 | 12 | 7.0 | 350 | 17.8 | | Semi-Clear | | 613 | |
| 2:30 | 12 | 6.7 | 847 | 15.7 | | Semi-Clear | | 999 | |
| | | | | | | | | | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

Project Name: American Chemical Service, Inc. | Well No.: MW42
Location: Griffith, Indiana | Project No.: 4077.0075
Developed By: MEV | Checked By:

'an this well be purged dry? ☐ Yes ■ No

2. Well development method

| | |
|---|---|
| surged with bailer and bailed | ■ |
| surged with bailer and pumped | ☐ |
| surged with block and bailed | ☐ |
| surged with block and pumped | ☐ |
| surged with block, bailed and pumped | ☐ |
| compressed air | ☐ |
| bailed only | ☐ |
| pumped only | ☐ |
| pumped slowly | ☐ |
| Other | ☐ |

3. Time spent developing well: 13 min.

Total well depth (TOC) (from well construction summary): 14.0 ft.

Measured well depth (Before): ___ ft.

Measured well depth (After): 14.0 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 12.7 gal.

Volume of water removed from well: 120.0 gal.

Relative recovery rate: ___ gal. per ___ min.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.42 ft. | 5.12 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) ■ a.m. | 7 / 19 / 96 (mm dd yy) ■ a.m. |
| Time: | c. 8 : 00 ☐ p.m. | 8 : 53 ☐ p.m. |
| 11 Sediment in well bottom: | ___ inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Brown | Semi-Clear |
| Odor | None | None |
| Turbidity | Turbid | Semi-turbid |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.68

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Untiltered) | ___ mg/l | ___ mg/l |
| 14. COD (250 ml Untiltered Sulfuric) | ___ mg/l (BEFORE) | ___ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 8:35 | 12 | 6.93 | 873 | 15.4 | | Brown | | 999 | |
| 8:37 | 12 | 7.00 | 933 | 14.7 | | Brown | | 999 | |
| 8:40 | 12 | 6.99 | 817 | 14.6 | | Lt. Brown | | 999 | |
| 8:42 | 12 | 7.08 | 890 | 14.5 | | Lt. Brown | | 999 | |
| 8:44 | 12 | 7.08 | 880 | 14.6 | | Lt. Brown | | 999 | |
| 8:45 | 12 | 7.13 | 860 | 14.5 | | Lt. Brown | | 999 | |
| 8:47 | 12 | 7.14 | 840 | 14.2 | | Lt. Brown | | 999 | |
| 8:49 | 12 | 7.15 | 840 | 14.2 | | Semi-Clear | | 999 | |
| 8:51 | 12 | 7.19 | 840 | 14.1 | | Semi-Clear | | 971 | |
| 8:53 | 12 | 7.20 | 830 | 13.8 | | Semi-Clear | | 672 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

Project Name: American Chemical Service, Inc. | Well No.: MW43
Location: Griffith, Indiana | Project No.: 4077.0075
Developed By: MEV | Checked By:

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well: 24 min.

4. Total well depth (TOC) (From well construction summary): 15.0 ft.

Measured well depth (Before): ___ ft.

Measured well depth (After): 15.0 ft.

5. Inside diameter of well: 2.00 in.

6. Volume of water in filter pack and well casing: 12.7 gal.

Volume of water removed from well: 96.0 gal.

Relative recovery rate: _____ gal. per _____ min.

8. Volume of water added (if any): 0.0 gal.

9. Source of water added: NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.32 ft. | 4.84 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | 7 / 19 / 96 (mm dd yy) |
| Time: | c. 7 : 55 ■ a.m. ☐ p.m. | 8 : 19 ■ a.m. ☐ p.m. |
| 11 Sediment in well bottom: | ___ inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Brown | Clear |
| Odor | None | None |
| Turbidity | Turbid | None |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.68

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | ___ mg/l | ___ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | ___ mg/l (BEFORE) | ___ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 7:55 | 12 | 7.02 | 900 | 18.7 | | Brown | | 999 | |
| 8:00 | 12 | 7.21 | 860 | 17.0 | | Brown | | 999 | Turbid meter blinking |
| 8:02 | 12 | 7.26 | 810 | 16.6 | | Lt. Brown | | 999 | |
| 8:05 | 12 | 7.30 | 790 | 16.6 | | Lt. Brown | | 999 | |
| 8:08 | 12 | 7.37 | 770 | 16.3 | | Lt. Brown | | 999 | |
| 8:12 | 12 | 7.38 | 760 | 16.2 | | Lt. Brown | | 999 | |
| 8:15 | 12 | 7.39 | 740 | 15.8 | | Lt. Brown | | 999 | |
| 8:19 | 12 | 7.43 | 750 | 15.9 | | Semi-Clear | | 999 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW44 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | MEV | Checked By | |

'an this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 17 min.

4. Total well depth (TOC) 133.3 ft.
(rom well construction summary)

Measured well depth (Before) ___ ft.

Measured well depth (After) 133.3 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 12.7 gal.

/olume of water removed from well 84.0 gal.

Relative recovery rate _____ gal. per. _____ min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 2.20 ft. | ___ ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) ■ a.m. | 7 / 19 / 96 (mm dd yy) ■ a.m. |
| Time: | c. 11 : 23 ☐ p.m. | 11 : 40 ☐ p.m. |
| 11 Sediment in well bottom: | ___ inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Brown | Semi-Clear |
| Odor | – | – |
| Turbidity | Turbid | None |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.68

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 11:23 | 12 | 7.62 | 12400 | 17.4 | | Brown | | 105 | |
| 11:25 | 12 | 7.75 | 14600 | 14.6 | | Brown | | 106 | Turbid meter blinking |
| 11:29 | 12 | 7.74 | 13700 | 13.7 | | Brown | | 999 | |
| 11:32 | 12 | 7.72 | 13100 | 13.1 | | Lt. Brown | | 999 | |
| 11:34 | 12 | 7.71 | 13100 | 13.1 | | Lt. Brown | | 999 | |
| 11:37 | 12 | 7.72 | 13300 | 13.3 | | Semi-Clear | | 999 | |
| 11:40 | 12 | 7.74 | 12900 | 12.9 | | Semi-Clear | | 332 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW45 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | MEV | Checked By | |

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 8 2 min.

4. Total well depth (TOC) 1 5 . 0 ft.
(From well construction summary)

Measured well depth (Before) . ft.

Measured well depth (After) 1 5 . 0 ft.

5. Inside diameter of well 2 . 0 0 in.

6. Volume of water in filter pack and well casing 1 2 . 7 gal.

Volume of water removed from well 8 4 . 0 gal.

Relative recovery rate _____ gal. per. _____ min.

8. Volume of water added (if any) 0 . 0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 5 . 4 0 ft. | . ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | / / (mm dd yy) |
| Time: | c. 12 : 00 ☐ a.m. ■ p.m. | 1 : 22 ☐ a.m. ■ p.m. |
| 11 Sediment in well bottom: | . inches | . inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Brown | Clear |
| Odor | Mothballs | Mothballs |
| Turbidity | Turbid | None |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9 . 4

Well casing Vol. (gallons) $0.16r^2 l$ = 2 . 1

Saturated length of sand pack (ft.) (ls) 1 1 . 0

Length of water column (ft.) (l) 1 2 . 6 8

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 12:00 | | 7.01 | 973 | 17.3 | | Brown | Mothballs | 999 | |
| 12:01 | | 7.08 | 941 | 17.2 | | Brown | Mothballs | 999 | Turbid meter blinking |
| 12:03 | | 7.02 | 986 | 17.1 | | Brown | Mothballs | 999 | |
| 12:04 | | 7.06 | 893 | 17 | | Lt. Brown | Mothballs | 999 | |
| 12:05 | | 6.85 | 920 | 17.1 | | Brown | Mothballs | 860 | |
| 1:20 | | 7.08 | 950 | 17.6 | | Semi-Clear | Mothballs | 615 | |
| 1:22 | | 7.07 | 930 | 17.3 | | Clear | Mothballs | 246 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW46 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | C. Yantz | Checked By | |

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 27 min.

4. Total well depth (TOC) 16.0 ft.
(from well construction summary)

Measured well depth (Before) 15.6 ft.

Measured well depth (After) 15.6 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 11.7 gal.

Volume of water removed from well 132.0 gal.

Relative recovery rate 5 gal. per. 1 min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 1.83 ft. | 1.85 ft. |
| Date: | b. 2 / 18 / 96 (mm dd yy) | 2 / 8 / 96 (mm dd yy) |
| Time: | c. 5 : 57 ☐ a.m. ■ p.m. | 6 : 50 ☐ a.m. ■ p.m. |
| 11 Sediment in well bottom: | 3.1 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ☐ Turbid ■ (Describe) |
| Color | Gray | Lt. Gray |
| Odor | Musty H2S | Musty H2S |
| Turbidity | Very | Slightly |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.3

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 13.77

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 6:23 | 12 | 7000 | 17.0 | 17.0 | | Gray | Musty | 330 | |
| 6:27 | 24 | 6600 | 17.0 | 17.0 | | Gray | Musty | 99 | |
| 6:29 | 36 | 6400 | 15.0 | 15.0 | | Gray | Musty | 99 | |
| 6:31 | 48 | 6300 | 15.0 | 15.0 | | Gray | Musty/H2S | 99 | |
| 6:33 | 60 | 6200 | 12.0 | 12.0 | | Gray | Musty/H2S | 99 | |
| 6:35 | 72 | 6200 | 12.0 | 12.0 | | Lt. Gray | Musty/H2S | 99 | |
| 6:36 | 84 | 6200 | 12.0 | 12.0 | | Lt. Gray | Musty/H2S | 99 | |
| 6:38 | 96 | 6200 | 13.0 | 13.0 | | Lt. Gray | Musty/H2S | 64 | |
| 6:42 | 108 | 6300 | 12.0 | 12.0 | | Lt. Gray | Musty/H2S | 67 | |
| 6:44 | 120 | 6300 | 12.0 | 12.0 | | Lt. Gray | Musty/H2S | 88 | |
| 6:46 | 132 | 6300 | 12.0 | 12.0 | | Lt. Gray | | 54 | |
| | | | | | | | | | |

**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW47 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | MEV | Checked By | |

Can this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ■
- surged with bailer and pumped ☐
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 19 min.

4. Total well depth (TOC) 130.0 ft.
(From well construction summary)

Measured well depth (Before) ___ ft.

Measured well depth (After) 130.0 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 12.7 gal.

Volume of water removed from well 60.0 gal.

Relative recovery rate _____ gal. per _____ min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 4.75 ft. | 5.46 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) ■ a.m. ☐ p.m. | 7 / 19 / 96 (mm dd yy) ☐ a.m. ☐ p.m. |
| Time: | c. ___ : ___ | ___ : ___ |
| 11 Sediment in well bottom: | ___ inches | ___ inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Brown | Clear |
| Odor | – | – |
| Turbidity | Turbid | None |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.68

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 10:16 | 12 | 7.50 | 153 | 2.2 | | Brown | -- | 999 | |
| 10:20 | 12 | 7.13 | 127 | 20.1 | | Lt. Brown | -- | 999 | |
| 10:25 | 12 | 7.07 | 120 | 20.1 | | Semi-Clear | -- | 385 | |
| 10:29 | 12 | 6.96 | 116 | 19.6 | | Clear | -- | 196 | |
| 10:35 | 12 | 6.94 | 113 | 19.4 | | Clear | -- | 117 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

Project Name: American Chemical Service, Inc. | Well No.: MW48
Location: Griffith, Indiana | Project No.: 4077.0075
Developed By: C. Yantz | Checked By:

'an this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed ☐
surged with bailer and pumped ■
surged with block and bailed ☐
surged with block and pumped ☐
surged with block, bailed and pumped ☐
compressed air ☐
bailed only ☐
pumped only ☐
pumped slowly ☐
Other ☐

3. Time spent developing well 15 min.

4. Total well depth (TOC) 17.0 ft.
(rom well construction summary)

Measured well depth (Before) 17.0 ft.

Measured well depth (After) 17.0 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 11.6 gal.

olume of water removed from well 72.0 gal.

Relative recovery rate 4.5 gal. per. 1 min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.68 ft. | 3.85 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) | 7 / 19 / 96 (mm dd yy) |
| Time: | c. 9 : 54 ■ a.m. ☐ p.m. | 9 : 35 ■ a.m. ☐ p.m. |
| 11 Sediment in well bottom: | 1.0 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Gray | Clear |
| Odor | Propane | Propane |
| Turbidity | Very | – |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.2

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 13.32

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | mg/l | mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | mg/l (BEFORE) | mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 10:19 | 12 | 7.4 | 1200 | 15.0 | | Gray | Propane/H2S | 99 | |
| 10:21 | 24 | 7.4 | 1100 | 14.0 | | Gray | Propane/H2S | 99 | |
| 10:23 | 36 | 7.5 | 1100 | 14.0 | | Lt. Gray | Propane/H2S | 62 | |
| 10:25 | 48 | 7.4 | 1100 | 14.0 | | Cloudy | Propane/H2S | 15 | |
| 10:27 | 60 | 7.4 | 100 | 14.0 | | Clear | Propane/H2S | 6 | |
| 10:30 | 72 | 7.4 | 1100 | 14.0 | | Clear | Propane/H2S | 4 | |
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**MONTGOMERY WATSON**

# MONITORING WELL DEVELOPMENT SUMMARY

| | | | |
|---|---|---|---|
| Project Name | American Chemical Service, Inc. | Well No. | MW49 |
| Location | Griffith, Indiana | Project No. | 4077.0075 |
| Developed By | C. Yantz | Checked By | |

an this well be purged dry? ☐ Yes ■ No

2. Well development method

- surged with bailer and bailed ☐
- surged with bailer and pumped ■
- surged with block and bailed ☐
- surged with block and pumped ☐
- surged with block, bailed and pumped ☐
- compressed air ☐
- bailed only ☐
- pumped only ☐
- pumped slowly ☐
- Other _____ ☐

3. Time spent developing well 13 min.

4. Total well depth (TOC) (From well construction summary) 163 ft.

Measured well depth (Before) 160 ft.

Measured well depth (After) 163 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 115 gal.

Volume of water removed from well 840 gal.

Relative recovery rate 6.5 gal. per 1 min.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added NA

| | Before Development | After Development |
|---|---|---|
| 10 Depth to Water (from top of well casing) | a. 3.53 ft. | 3.70 ft. |
| Date: | b. 7 / 19 / 96 (mm dd yy) ■ a.m. | 7 / 19 / 96 (mm dd yy) ■ a.m. |
| Time: | c. 10 : 43 ☐ p.m. | 11 : 22 ☐ p.m. |
| 11 Sediment in well bottom: | 2.0 inches | 0.0 inches |
| 12 Water Observations: | Clear ☐ Turbid ■ (Describe) | Clear ■ Turbid ☐ (Describe) |
| Color | Gray | Clear |
| Odor | Musty | Musty |
| Turbidity | Very | – |
| HNu | – | – |

Filter Pack Vol. (gallons) $0.057(R^2 - r^2)ls$ = 9.4

Well casing Vol. (gallons) $0.16r^2 l$ = 2.1

Saturated length of sand pack (ft.) (ls) 11.0

Length of water column (ft.) (l) 12.77

R = Radius of borehole (in.) r = Well radius (in.)

Collect groundwater sample if drilling fluids were used and well is at solid waste facility:

| | | |
|---|---|---|
| 13 Total suspended solids (500 ml Unfiltered) | _____ mg/l | _____ mg/l |
| 14. COD (250 ml Unfiltered Sulfuric) | _____ mg/l (BEFORE) | _____ mg/l (AFTER) |

| Time | Gallons Purged | pH | Spec. Cond. | T deg. C | Spec. Cond. at 25 deg. C | Color | Odor | Turb. | Comment |
|---|---|---|---|---|---|---|---|---|---|
| 11:10 | 12 | 7.6 | 570 | 15.0 | | Gray | Musty/H2S | 82 | |
| 11:12 | 24 | 7.4 | 560 | 15.0 | | Gray | Musty/H2S | 99 | |
| 11:14 | 36 | 7.5 | 560 | 14.0 | | Lt. Gray | Musty/H2S | 99 | |
| 11:15 | 48 | 7.4 | 560 | 14.0 | | Cloudy | Musty/H2S | 34 | |
| 11:16 | 60 | 7.4 | 570 | 14.0 | | Cloudy | Musty/H2S | 12 | |
| 11:18 | 72 | 7.4 | 570 | 14.0 | | Clear | Musty/H2S | 5 | |
| 11:20 | 84 | 7.4 | 570 | 14.0 | | Clear | Musty/H2S | 4 | |
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1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLK5U

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: VBLK5U Date Received: / /

Lab File ID: 0816502.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 1 | U |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | 5 | U |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | 1 | U |
| 78-93-3 | 2-Butanone | 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1 | U |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLK5U

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: VBLK5U Date Received: / /

Lab File ID: 0816502.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. 128370 | Butylated Hydroxytoluene | 27.460 | 2 | YNJ |
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1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE

VBLK5Y

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: VBLK5Y Date Received: / /

Lab File ID: 0820503.D Date Analyzed: 08/20/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 1 | U |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | 5 | U |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | 1 | U |
| 78-93-3 | 2-Butanone | 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1 | U |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

VBLK5Y

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: VBLK5Y Date Received: / /

Lab File ID: 0820503.D Data Analyzed: 08/20/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 1

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. 128370 | Butylated Hydroxytoluene | 27.500 | 3 | YNJ |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK06

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: SBLK06

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 8151409A.D

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK06

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: SBLK06

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 8151409A.D

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |
| 65-85-0 | Benzoic acid | 50 | U |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLK06

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: SBLK06

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 8151409A.D

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:_____

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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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

SBLK07

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: SBLK07

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815405.D

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO

SBLK07

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: SBLK07

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815405.D

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
## TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLK07

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: SBLK07

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815405.D

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

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:_____

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 108930 | Cyclohexanol | 6.440 | 7 | NJ |
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APD-GWMW 37-01
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW37

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813504 Date Received: 08/07/96

Lab File ID: 0815505.D Date Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 0.9 | J |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 67-64-1 | Acetone | R | 5 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | U | 0.2 | J |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 0.1 | J |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW37

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813504 Date Received: 08/07/96

Lab File ID: 0815505.D Data Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW37

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813504

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815413.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE

MW37

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813504

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815413.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW37

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813504

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815413.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. ~~108930~~ | ~~Cyclohexanol~~ | ~~6.440~~ | ~~10~~ | ~~XNJ~~ R |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW37

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813504

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_026.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/07/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |



VALIDATED

APD-GWM1W33-01
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW38

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814709 Date Received: 08/08/96

Lab File ID: 0815I10.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 0.8 | J |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | U | 0.3 | J |
| 67-64-1 | Acetone | ~~U~~ R | 8 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW38

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814709 Date Received: 08/08/96

Lab File ID: 0815I10.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW38

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814709

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816408.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW38

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814709

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816408.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW38

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814709

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816408.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 4

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q | |
|---|---|---|---|---|---|
| 1. | ~~Unknown~~ | ~~5.850~~ | ~~6~~ | ~~BJ~~ | R |
| 2. | Unknown | 6.510 | 3 | J | |
| 3. ~~930687~~ | ~~2-Cyclohexen-1-one~~ | ~~7.400~~ | ~~2~~ | ~~XNJ~~ | R |
| 4. ~~134623~~ | ~~Diethyltoluamide~~ | ~~17.030~~ | ~~11~~ | ~~NJ~~ | R |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW38

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814709

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_049.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/08/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |



VALIDATED

APD-GWMW-S4-01
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW39

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813506 Date Received: 08/07/96

Lab File ID: 0815I06.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 1 | |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 0.9 | J |
| 75-00-3 | Chloroethane | | 5 | |
| 75-09-2 | Methylene Chloride | U | 0.4 | J |
| 67-64-1 | Acetone | R U | 8 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 0.3 | J |
| 156-59-2 | cis-1,2-Dichloroethene | | 0.1 | J |
| 156-60-5 | trans-1,2-Dichloroethene | | 4 | |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | U | 0.7 | J |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 12 | |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW39

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813506 Date Received: 08/07/96

Lab File ID: 0815I06.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW39

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813506

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816406.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW39

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813506

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816406.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 4 | J |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW39

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813506

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816406.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 11

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Unknown | 5.850 | 5 | JB |
| 2. | Unknown | 6.510 | 2 | J |
| 3. | Unknown | 6.560 | 2 | J |
| 4. 112367 | Ethane, 1,1'-oxybis[2-ethoxy | 10.110 | 6 | NJ |
| 5. | Unknown | 13.060 | 2 | J |
| 6. | Unknown | 16.250 | 29 | J |
| 7. | Unknown | 16.340 | 2 | J |
| 8. 101100 | Propanoic acid, 2-(3-chlorop | 17.100 | 5 | NJ |
| 9. 88197 | Benzenesulfonamide, 2-methyl | 17.600 | 3 | NJ |
| 10. 70553 | Benzenesulfonamide, 4-methyl | 18.050 | 5 | NJ |
| 11. | Unknown | 24.880 | 8 | J |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW39

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813506

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_028.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/07/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |



VALIDATED

APD-GWMW-90-01
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW40

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814710 Date Received: 08/08/96

Lab File ID: 0815I11.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 1 | |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 67-64-1 | Acetone | RU | 9 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



DATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW40

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814710 Date Received: 08/08/96

Lab File ID: 0815I11.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW40

Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814710

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816409.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW40

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

ab Code: IEA Case No.: 1589-172 SDG No.: 08103

atrix: (soil/water) WATER Lab Sample ID: 960814710

ample wt/vol: 1000 (g/mL) mL Lab File ID: 0816409.D

evel: (low/med) LOW Date Received: 08/08/96

Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW40

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814710

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816409.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 6

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q | |
|---|---|---|---|---|---|
| 1. 822673 | ~~2-Cyclohexen-1-ol~~ | ~~6.510~~ | ~~3~~ | ~~XNJ~~ | R |
| 2. 108941 | Cyclohexanone | 6.620 | 4 | XNJ | |
| 3. 930687 | 2-Cyclohexen-1-one | ~~7.400~~ | ~~3~~ | ~~XNJ~~ | |
| 4. | 1,2-Cyclohexanediol isomer | 9.780 | 9 | XJ | |
| 5. 98862 | Acetophenone | 9.870 | 9 | NJ | |
| 6. 134623 | Diethyltoluamide | 17.030 | 3 | NJ | R |
| 7. | | | | | |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW40

b Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814710

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_050.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/08/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |

HPD-GWMW7P-01
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW41

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814713 Date Received: 08/08/96

Lab File ID: 0816504.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 1 | |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 67-64-1 | Acetone | RU | 10 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW41

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814713 Date Received: 08/08/96

Lab File ID: 0816504.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW41

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814713

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816412.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW41

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814713

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816412.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 8 | J |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW41

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814713

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816412.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 6

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q | |
|---|---|---|---|---|---|
| 1. | ~~Unknown~~ | ~~5.850~~ | ~~10~~ | ~~BJ~~ | R |
| 2. | Unknown | 6.520 | 2 | J | |
| 3. ~~930687~~ | ~~2-Cyclohexen-1-one~~ | ~~7.400~~ | ~~2~~ | ~~XNJ~~ | R |
| 4. 98862 | Acetophenone | 9.870 | 3 | NJ | |
| ~~5. 134623~~ | ~~Diethyltoluamide~~ | ~~17.030~~ | ~~4~~ | ~~NJ~~ | R |
| 6. 112458 | Unknown | 19.425 | 2 | NJ | |
| 7. | | | | | |
| 8. | | | | | |
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| 10. | | | | | |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW41

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814713

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_053.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/08/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |



VALIDATED

APD-GWMW42-01
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW42

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814714 Date Received: 08/07/96

Lab File ID: 0816503.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 1 | U |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 2 | U |
| 67-64-1 | Acetone | R U | 6 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | U | 0.3 | J |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW42

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814714 Date Received: 08/07/96

Lab File ID: 0816503.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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FORM I LCV-TIC

UNDATED 6/91

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW42

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814714

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816413.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW42

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814714

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816413.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 4 | J |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



3/90

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW42

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814714

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816413.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 4

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Unknown | 5.850 | 7 | BJ |
| 2. 822673 | 2-Cyclohexen-1-ol | 6.520 | 2 | XNJ |
| 3. 930687 | 2-Cyclohexen-1-one | 7.400 | 2 | XNJ |
| 4. 134623 | Diethyltoluamide | 17.030 | 19 | NJ |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW42

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814714

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_054.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/08/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |



VALIDATED

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

AMP-GWMW43-01

MW43

8/8/96

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821601 Date Received: 08/09/96

Lab File ID: 0816508.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) VALIDATED Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 14 0.6 | J |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | R 7 | |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | 1 | U |
| 78-93-3 | 2-Butanone | R 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1 | U |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW43

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821601 Date Received: 08/09/96

Lab File ID: 0816508.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

VALIDATED

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
APD-GWMW43-01
MW43
8-8-96

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821601

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815407.D

Level: (low/med) LOW Date Received: 08/09/96

VALIDATED

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW43

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821601

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815407.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

VALIDATED

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW43

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821601

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815407.D

Level: (low/med) LOW VALIDATED Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:_____

Number TICs found: 1

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 134623 | Diethyltoluamide | 17.030 | N.P. ~~17~~ | ~~NJ~~ |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW43

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

VALIDATED

Matrix: (soil/water) WATER Lab Sample ID: 960821601

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P1081496_037.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/09/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

VALIDATED

CLIENT SAMPLE NO.

APD-GW-MW44-01

MW44

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821602 Date Received: 08/09/96

Lab File ID: 0816509.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 1.4u ~~0.9~~ | J |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | R 5 | U |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | 1.0u ~~0.3~~ | J |
| 78-93-3 | 2-Butanone | R 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1.0u ~~0.1~~ | J |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VALIDATED

CLIENT SAMPLE NO.

MW44

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821602 Date Received: 08/09/96

Lab File ID: 0816509.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
APO-GWMW44-01

MW44

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

VALIDATED 8-8-96

Matrix: (soil/water) WATER Lab Sample ID: 960821602

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815408.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW44

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821602

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815408.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW44

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-17 VALIDATED SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821602

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815408.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:_____

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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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW44

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

VALIDATED

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821602

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P1081496_038.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/09/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

VALIDATED

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
ARD-GWMW45-01

MW45

8/8/96

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821603 Date Received: 08/09/96

Lab File ID: 0816510.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 25.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 25 | U |
| 74-83-9 | Bromomethane | 25 | U |
| 75-01-4 | Vinyl Chloride | 25 | U |
| 75-00-3 | Chloroethane | J 82 | |
| 75-09-2 | Methylene Chloride | 50 | U |
| 67-64-1 | Acetone | R ~~45~~ 170 | |
| 75-15-0 | Carbon Disulfide | 25 | U |
| 75-35-4 | 1,1-Dichloroethene | 25 | U |
| 75-34-3 | 1,1-Dichloroethane | 25 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 25 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 25 | U |
| 67-66-3 | Chloroform | 25 | U |
| 107-06-2 | 1,2-Dichloroethane | ~~25~~ ~~45~~ 20 | J |
| 78-93-3 | 2-Butanone | R 120 | U |
| 74-97-5 | Bromochloromethane | 25 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 25 | U |
| 56-23-5 | Carbon Tetrachloride | 25 | U |
| 75-27-4 | Bromodichloromethane | 25 | U |
| 78-87-5 | 1,2-Dichloropropane | 25 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 25 | U |
| 79-01-6 | Trichloroethene | 25 | U |
| 124-48-1 | Dibromochloromethane | 25 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 25 | U |
| 71-43-2 | Benzene | 530 | |
| 10061-02-6 | trans-1,3-Dichloropropene | 25 | U |
| 75-25-2 | Bromoform | 25 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 120 | U |
| 591-78-6 | 2-Hexanone | 120 | U |
| 127-18-4 | Tetrachloroethene | 25 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 25 | U |
| 106-93-4 | 1,2-Dibromoethane | 25 | U |
| 108-88-3 | Toluene | 25 | U |
| 108-90-7 | Chlorobenzene | 16 | J |
| 100-41-4 | Ethylbenzene | 10 | J |
| 100-42-5 | Styrene | 25 | U |
| 1330-20-7 | Xylenes (total) | 60 | |
| 541-73-1 | 1,3-Dichlorobenzene | 25 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 25 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 25 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 25 | U |

1LCE VALIDATED

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW45

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821603 Date Received: 08/09/96

Lab File ID: 0816510.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 25.0

Number TICs found: 2

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | Trimethylbenzene Isomer | 22.320 | 210 | J |
| 2. | Substituted Benzene | 23.320 | 70 | J |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

VALIDATED

CLIENT SAMPLE NO.
APD-GWMW45-01

MW45

8/8/96

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821603

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816402.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 41 | |
| 111-44-4 | bis(2-Chloroethyl)ether | 7 | J |
| 95-57-8 | 2-Chlorophenol | 20 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 20 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 20 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 20 | U |
| 95-48-7 | 2-Methylphenol | 20 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 20 | U |
| 106-44-5 | 4-Methylphenol | 20 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 20 | U |
| 67-72-1 | Hexachloroethane | 20 | U |
| 98-95-3 | Nitrobenzene | 20 | U |
| 78-59-1 | Isophorone | 20 | U |
| 88-75-5 | 2-Nitrophenol | 20 | U |
| 105-67-9 | 2,4-Dimethylphenol | 20 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 20 | U |
| 120-83-2 | 2,4-Dichlorophenol | 20 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 20 | U |
| 91-20-3 | Naphthalene | 84 | |
| 106-47-8 | 4-Chloroaniline | 20 | U |
| 87-68-3 | Hexachlorobutadiene | 20 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 20 | U |
| 91-57-6 | 2-Methylnaphthalene | 4 | J |
| 77-47-4 | Hexachlorocyclopentadiene | 20 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 20 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 20 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethylphthalate | 20 | U |
| 208-96-8 | Acenaphthylene | 20 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 20 | U |
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 20 | U |

VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW45

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821603

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816402.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 20 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 20 | U |
| 84-66-2 | Diethylphthalate | 20 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 20 | U |
| 86-73-7 | Fluorene | 20 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 20 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 20 | U |
| 118-74-1 | Hexachlorobenzene | 20 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 20 | U |
| 120-12-7 | Anthracene | 20 | U |
| 86-74-8 | Carbazole | 20 | U |
| 84-74-2 | Di-n-butylphthalate | 20 | U |
| 206-44-0 | Fluoranthene | 20 | U |
| 129-00-0 | Pyrene | 20 | U |
| 85-68-7 | Butylbenzylphthalate | 20 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 20 | U |
| 218-01-9 | Chrysene | 20 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 20 | U |
| 117-84-0 | Di-n-octylphthalate | 20 | U |
| 205-99-2 | Benzo(b)fluoranthene | 20 | U |
| 207-08-9 | Benzo(k)fluoranthene | 20 | U |
| 50-32-8 | Benzo(a)pyrene | 20 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 20 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 20 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 20 | U |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VALIDATED

CLIENT SAMPLE NO.

MW45

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821603

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816402.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:_____

Number TICs found: 12

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Substituted Benzene | 8.000 | 6 | J |
| 2. | Substituted Benzene | 8.100 | 19 | J |
| 3. | Substituted Benzene | 8.570 | 100 | J |
| 4. | Substituted Benzene | 9.090 | 72 | J |
| 5. | Unknown | 10.110 | 22 | J |
| 6. | Unknown | 11.230 | 5 | J |
| 7. 27129879 | Benzenemethanol, 3,5-dimethy | 12.850 | 4 | NJ |
| 8. 611018 | Benzoic acid, 2,4-dimethyl- | 14.090 | 7 | NJ |
| 9. | Unknown | 15.100 | 8 | J |
| 10. 134623 | ~~Diethyltoluamide~~ | 17.030 | ~~7~~ | ~~NJ~~ |
| 11. 101100 | Propanoic acid, 2-(3-chlorop | 17.090 | 4 | NJ |
| 12. 76733 | Secobarbital | 19.570 | 9 | NJ |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

VALIDATED

CLIENT SAMPLE NO.

MW45

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821603

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P1081496_039.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/09/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

APD-GWMW46-01
8-5-96

1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW46

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960810301 Date Received: 08/06/96

Lab File ID: 0814505.D Date Analyzed: 08/14/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | U 0.6 | J |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 0.2 | J |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | R ~~U~~ 8 | |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | U 0.3 | J |
| 78-93-3 | 2-Butanone | R 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 0.8 | J |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | J 3 | J |
| 591-78-6 | 2-Hexanone | R 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1 | U |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW46

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960810301 Date Received: 08/06/96

Lab File ID: 0814505.D Data Analyzed: 08/14/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW46

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960810301

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815406.D

Level: (low/med) LOW Date Received: 08/06/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/07/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 3 | J |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 3 | J |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW46

b Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960810301

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815406.D

Level: (low/med) LOW Date Received: 08/06/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/07/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 3 | J |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW46

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960810301

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815406.D

Level: (low/med) LOW Date Received: 08/06/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/07/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 11

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Unknown | 5.860 | 13 | J |
| 2. | Unknown | 6.070 | 11 | J |
| 3. | Unknown | 6.440 | 2 | J |
| 4. 112367 | Ethane, 1,1'-oxybis[2-ethoxy | 10.120 | 4 | NJ |
| 5. 65850 | Benzoic acid | 11.550 | 8 | NJ |
| 6. | Unknown | 12.770 | 11 | J |
| 7. | Unknown | 13.990 | 13 | J |
| 8. 88197 | Benzenesulfonamide, 2-methyl | 17.580 | 2 | NJ |
| 9. 70553 | Benzenesulfonamide, 4-methyl | 18.030 | 2 | NJ |
| 10. | Unknown | 20.980 | 3 | J |
| 11. 10544500 | Sulfur, mol. (S8) | 22.020 | 2 | NJ |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW46

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960810301

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_090.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/06/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/09/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/21/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |

VALIDATED

APD-GWMW47-01
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW47

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814711 Date Received: 08/08/96

Lab File ID: 0815I12.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | U | 0.5 | J |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | U | 0.3 | J |
| 67-64-1 | Acetone | U R | 8 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW47

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814711 Date Received: 08/08/96

Lab File ID: 0815I12.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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FORM I LCV-TIC

VALIDATED 6/91

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW47

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814711

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816410.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW47

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814711

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816410.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW47

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814711

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816410.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 4

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q | |
|---|---|---|---|---|---|
| ~~1.~~ | ~~Unknown~~ | ~~5.850~~ | ~~6~~ | ~~BJ~~ | R |
| 2. | Unknown | 6.510 | 2 | J | |
| ~~3. 930687~~ | ~~2-Cyclohexen-1-one~~ | ~~7.400~~ | ~~2~~ | ~~XNJ~~ | R |
| ~~4. 134623~~ | ~~Diethyltoluamide~~ | ~~17.030~~ | ~~2~~ | ~~NJ~~ | R |
| 5. | | | | | |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW47

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814711

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_051.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/08/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |



UPDATED

APD-GWMW 7-91
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW479

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814712 Date Received: 08/08/96

Lab File ID: 0815I13.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | U 0.3 | J |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | U 0.5 | J |
| 67-64-1 | Acetone | R U 8 | |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | 1 | U |
| 78-93-3 | 2-Butanone | R 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R 5 | U |
| 591-78-6 | 2-Hexanone | R 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1 | U |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW479

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814712 Date Received: 08/08/96

Lab File ID: 0815I13.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
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| 30. | | | | |



VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW479

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814712

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816411.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW479

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814712

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816411.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW479

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814712

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816411.D

Level: (low/med) LOW Date Received: 08/08/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 5

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q | |
|---|---|---|---|---|---|
| 1. | ~~Unknown~~ | ~~5.850~~ | ~~8~~ | ~~BJ~~ | R |
| 2. ~~822673~~ | ~~2-Cyclohexen-1-ol~~ | ~~6.510~~ | ~~2~~ | ~~XNJ~~ | R |
| 3. ~~930687~~ | ~~2-Cyclohexen-1-one~~ | ~~7.400~~ | ~~3~~ | ~~XNJ~~ | R |
| 4. 98862 | Acetophenone | 9.870 | 2 | NJ | |
| 5. ~~134623~~ | ~~Diethyltoluamide~~ | ~~17.030~~ | 14 | NJ | R |
| 6. | | | | | |
| 7. | | | | | |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW479

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960814712

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_052.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/08/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |



VALIDATED

HPD-GWMW 13-01
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW48

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813505 Date Received: 08/07/96

Lab File ID: 0815508.D Date Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 500.0

| CAS NO. | COMPOUND | | CONCENTRATION (ug/L) | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 500 | U |
| 74-83-9 | Bromomethane | | 500 | U |
| 75-01-4 | Vinyl Chloride | | 500 | U |
| 75-00-3 | Chloroethane | | 1000 | |
| 75-09-2 | Methylene Chloride | | 70 | J |
| 67-64-1 | Acetone | R | 2500 | U |
| 75-15-0 | Carbon Disulfide | | 500 | U |
| 75-35-4 | 1,1-Dichloroethene | | 500 | U |
| 75-34-3 | 1,1-Dichloroethane | | 500 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 500 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 500 | U |
| 67-66-3 | Chloroform | | 500 | U |
| 107-06-2 | 1,2-Dichloroethane | | 500 | U |
| 78-93-3 | 2-Butanone | R | 2500 | U |
| 74-97-5 | Bromochloromethane | | 500 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 500 | U |
| 56-23-5 | Carbon Tetrachloride | | 500 | U |
| 75-27-4 | Bromodichloromethane | | 500 | U |
| 78-87-5 | 1,2-Dichloropropane | | 500 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 500 | U |
| 79-01-6 | Trichloroethene | | 500 | U |
| 124-48-1 | Dibromochloromethane | | 500 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 500 | U |
| 71-43-2 | Benzene | | 9100 | |
| 10061-02-6 | trans-1,3-Dichloropropene | | 500 | U |
| 75-25-2 | Bromoform | | 500 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 2500 | U |
| 591-78-6 | 2-Hexanone | R | 2500 | U |
| 127-18-4 | Tetrachloroethene | | 500 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 500 | U |
| 106-93-4 | 1,2-Dibromoethane | | 500 | U |
| 108-88-3 | Toluene | | 500 | U |
| 108-90-7 | Chlorobenzene | | 500 | U |
| 100-41-4 | Ethylbenzene | | 500 | U |
| 100-42-5 | Styrene | | 500 | U |
| 1330-20-7 | Xylenes (total) | | 500 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 500 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 500 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 500 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 500 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW48

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813505 Date Received: 08/07/96

Lab File ID: 0815508.D Data Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 500.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW48

ıb Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813505

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816405.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 110 | |
| 111-44-4 | bis(2-Chloroethyl)ether | 20 | U |
| 95-57-8 | 2-Chlorophenol | 20 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 20 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 20 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 20 | U |
| 95-48-7 | 2-Methylphenol | 20 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 20 | U |
| 106-44-5 | 4-Methylphenol | 20 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 20 | U |
| 67-72-1 | Hexachloroethane | 20 | U |
| 98-95-3 | Nitrobenzene | 20 | U |
| 78-59-1 | Isophorone | 20 | U |
| 88-75-5 | 2-Nitrophenol | 20 | U |
| 105-67-9 | 2,4-Dimethylphenol | 20 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 20 | U |
| 120-83-2 | 2,4-Dichlorophenol | 20 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 20 | U |
| 91-20-3 | Naphthalene | 20 | U |
| 106-47-8 | 4-Chloroaniline | 20 | U |
| 87-68-3 | Hexachlorobutadiene | 20 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 20 | U |
| 91-57-6 | 2-Methylnaphthalene | 20 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 20 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 20 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 20 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethylphthalate | 20 | U |
| 208-96-8 | Acenaphthylene | 20 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 0.9 | J |
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 20 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW48

\b Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813505

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816405.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 20 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 20 | U |
| 84-66-2 | Diethylphthalate | 20 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 20 | U |
| 86-73-7 | Fluorene | 20 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 20 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 20 | U |
| 118-74-1 | Hexachlorobenzene | 20 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 20 | U |
| 120-12-7 | Anthracene | 20 | U |
| 86-74-8 | Carbazole | 20 | U |
| 84-74-2 | Di-n-butylphthalate | 20 | U |
| 206-44-0 | Fluoranthene | 20 | U |
| 129-00-0 | Pyrene | 20 | U |
| 85-68-7 | Butylbenzylphthalate | 20 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 20 | U |
| 218-01-9 | Chrysene | 20 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 20 | U |
| 117-84-0 | Di-n-octylphthalate | 20 | U |
| 205-99-2 | Benzo(b)fluoranthene | 20 | U |
| 207-08-9 | Benzo(k)fluoranthene | 20 | U |
| 50-32-8 | Benzo(a)pyrene | 20 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 20 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 20 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 20 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW48

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813505

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816405.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 20

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 110816 | Disulfide, diethyl | 7.180 | 86 | NJ |
| 2. 873949 | Cyclohexanone, 3,3,5-trimeth | 9.420 | 310 | NJ |
| 3. 112367 | Ethane, 1,1'-oxybis[2-ethoxy | 10.130 | 27 | NJ |
| 4. | Unknown | 10.580 | 53 | J |
| 5. 631674 | Ethanethioamide, N,N-dimethy | 10.740 | 10 | NJ |
| 6. | Unknown | 11.080 | 52 | J |
| 7. 144194 | 1,3-Pentanediol, 2,2,4-trime | 11.270 | 35 | NJ |
| 8. 6165442 | Cyclohexane, 1,1'-(1,4-butan | 12.130 | 16 | NJ |
| 9. | Unknown | 12.310 | 28 | J |
| 10. | Unknown | 12.940 | 20 | J |
| 11. | Chlorinated benzoic acid iso | 14.170 | 48 | J |
| 12. | Unknown | 14.510 | 22 | J |
| 13. | Unknown | 14.640 | 12 | J |
| 14. 499069 | Benzoic acid, 3,5-dimethyl- | 14.880 | 10 | NJ |
| 15. | Unknown | 16.310 | 140 | J |
| 16. | Unknown | 16.390 | 7 | J |
| 17. 101100 | Propanoic acid, 2-(3-chlorop | 17.170 | 31 | NJ |
| 18. 76733 | Secobarbital | 19.610 | 15 | NJ |
| 19. | Unknown | 20.470 | 25 | J |
| 20. | Unknown | 24.920 | 67 | J |
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW48

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813505

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_027.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/07/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

APD-GWMW97-01
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW49

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813502 Date Received: 08/07/96

Lab File ID: 0814E04.D Date Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 500.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 500 | U |
| 74-83-9 | Bromomethane | | 500 | U |
| 75-01-4 | Vinyl Chloride | | 500 | U |
| 75-00-3 | Chloroethane | | 480 | J |
| 75-09-2 | Methylene Chloride | U | 70 | J |
| 67-64-1 | Acetone | R | 2500 | U |
| 75-15-0 | Carbon Disulfide | | 500 | U |
| 75-35-4 | 1,1-Dichloroethene | | 500 | U |
| 75-34-3 | 1,1-Dichloroethane | | 500 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 500 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 500 | U |
| 67-66-3 | Chloroform | | 500 | U |
| 107-06-2 | 1,2-Dichloroethane | | 500 | U |
| 78-93-3 | 2-Butanone | R | 2500 | U |
| 74-97-5 | Bromochloromethane | | 500 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 500 | U |
| 56-23-5 | Carbon Tetrachloride | | 500 | U |
| 75-27-4 | Bromodichloromethane | | 500 | U |
| 78-87-5 | 1,2-Dichloropropane | | 500 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 500 | U |
| 79-01-6 | Trichloroethene | | 500 | U |
| 124-48-1 | Dibromochloromethane | | 500 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 500 | U |
| 71-43-2 | Benzene | | 5000 | |
| 10061-02-6 | trans-1,3-Dichloropropene | | 500 | U |
| 75-25-2 | Bromoform | | 500 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 2500 | U |
| 591-78-6 | 2-Hexanone | R | 2500 | U |
| 127-18-4 | Tetrachloroethene | | 500 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 500 | U |
| 106-93-4 | 1,2-Dibromoethane | | 500 | U |
| 108-88-3 | Toluene | | 500 | U |
| 108-90-7 | Chlorobenzene | | 500 | U |
| 100-41-4 | Ethylbenzene | | 500 | U |
| 100-42-5 | Styrene | | 500 | U |
| 1330-20-7 | Xylenes (total) | | 500 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 500 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 500 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 500 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 500 | U |



ATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW49

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813502 Date Received: 08/07/96

Lab File ID: 0814E04.D Data Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 500.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW49

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813502

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816403.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 93 | |
| 111-44-4 | bis(2-Chloroethyl)ether | 20 | U |
| 95-57-8 | 2-Chlorophenol | 20 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 20 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 20 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 20 | U |
| 95-48-7 | 2-Methylphenol | 20 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 20 | U |
| 106-44-5 | 4-Methylphenol | 20 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 20 | U |
| 67-72-1 | Hexachloroethane | 20 | U |
| 98-95-3 | Nitrobenzene | 20 | U |
| 78-59-1 | Isophorone | 1 | J |
| 88-75-5 | 2-Nitrophenol | 20 | U |
| 105-67-9 | 2,4-Dimethylphenol | 20 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 20 | U |
| 120-83-2 | 2,4-Dichlorophenol | 20 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 20 | U |
| 91-20-3 | Naphthalene | 20 | U |
| 106-47-8 | 4-Chloroaniline | 20 | U |
| 87-68-3 | Hexachlorobutadiene | 20 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 20 | U |
| 91-57-6 | 2-Methylnaphthalene | 20 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 20 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 20 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 20 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethylphthalate | 20 | U |
| 208-96-8 | Acenaphthylene | 20 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 20 | U |
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 20 | U |



VALIDATED

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW49

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813502

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816403.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 20 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 20 | U |
| 84-66-2 | Diethylphthalate | 20 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 20 | U |
| 86-73-7 | Fluorene | 20 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 20 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 20 | U |
| 118-74-1 | Hexachlorobenzene | 20 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 20 | U |
| 120-12-7 | Anthracene | 20 | U |
| 86-74-8 | Carbazole | 20 | U |
| 84-74-2 | Di-n-butylphthalate | 20 | U |
| 206-44-0 | Fluoranthene | 20 | U |
| 129-00-0 | Pyrene | 20 | U |
| 85-68-7 | Butylbenzylphthalate | 20 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 20 | U |
| 218-01-9 | Chrysene | 20 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 20 | U |
| 117-84-0 | Di-n-octylphthalate | 20 | U |
| 205-99-2 | Benzo(b)fluoranthene | 20 | U |
| 207-08-9 | Benzo(k)fluoranthene | 20 | U |
| 50-32-8 | Benzo(a)pyrene | 20 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 20 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 20 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 20 | U |

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW49

\b Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813502

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816403.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 17

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Unknown | 9.200 | 11 | J |
| 2. 873949 | Cyclohexanone, 3,3,5-trimeth | 9.430 | 360 | NJ |
| 3. 112367 | Ethane, 1,1'-oxybis[2-ethoxy | 10.110 | 14 | NJ |
| 4. | Unknown | 10.520 | 38 | J |
| 5. | Unknown | 11.120 | 12 | J |
| 6. | Unknown | 12.130 | 14 | J |
| 7. | Chlorinated benzoic acid iso | 14.030 | 20 | J |
| 8. | Unknown | 14.130 | 7 | J |
| 9. | Unknown | 14.450 | 13 | J |
| 10. 499069 | Benzoic acid, 3,5-dimethyl- | 14.820 | 8 | NJ |
| 11. | Unknown | 15.800 | 7 | J |
| 12. | Unknown | 16.300 | 180 | J |
| 13. | Unknown | 16.700 | 9 | J |
| ~~14. 134623~~ | ~~Diethyltoluamide~~ | ~~17.040~~ | ~~15~~ | ~~NJ~~ |
| 15. 76733 | Secobarbital | 19.590 | 12 | NJ |
| 16. | Unknown | 20.460 | 27 | J |
| 17. | Unknown | 24.910 | 46 | J |
| 18. | | | | |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW49

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813502

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_091.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/07/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:08/09/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/21/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |



VALIDATED

APD - [illegible]
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW499

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813503 Date Received: 08/07/96

Lab File ID: 0815504.D Date Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 250.0

| CAS NO. | COMPOUND | | CONCENTRATION (ug/L) | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 250 | U |
| 74-83-9 | Bromomethane | | 250 | U |
| 75-01-4 | Vinyl Chloride | | 250 | U |
| 75-00-3 | Chloroethane | | 450 | J |
| 75-09-2 | Methylene Chloride | | 500 | U |
| 67-64-1 | Acetone | R | 1200 | U |
| 75-15-0 | Carbon Disulfide | | 250 | U |
| 75-35-4 | 1,1-Dichloroethene | | 250 | U |
| 75-34-3 | 1,1-Dichloroethane | | 250 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 250 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 250 | U |
| 67-66-3 | Chloroform | | 250 | U |
| 107-06-2 | 1,2-Dichloroethane | | 250 | U |
| 78-93-3 | 2-Butanone | R | 1200 | U |
| 74-97-5 | Bromochloromethane | | 250 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 250 | U |
| 56-23-5 | Carbon Tetrachloride | | 250 | U |
| 75-27-4 | Bromodichloromethane | | 250 | U |
| 78-87-5 | 1,2-Dichloropropane | | 250 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 250 | U |
| 79-01-6 | Trichloroethene | | 250 | U |
| 124-48-1 | Dibromochloromethane | | 250 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 250 | U |
| 71-43-2 | Benzene | | 5100 | |
| 10061-02-6 | trans-1,3-Dichloropropene | | 250 | U |
| 75-25-2 | Bromoform | | 250 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 1200 | U |
| 591-78-6 | 2-Hexanone | R | 1200 | U |
| 127-18-4 | Tetrachloroethene | | 250 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 250 | U |
| 106-93-4 | 1,2-Dibromoethane | | 250 | U |
| 108-88-3 | Toluene | | 250 | U |
| 108-90-7 | Chlorobenzene | | 250 | U |
| 100-41-4 | Ethylbenzene | | 250 | U |
| 100-42-5 | Styrene | | 250 | U |
| 1330-20-7 | Xylenes (total) | | 250 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 250 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 250 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 250 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 250 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW499

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813503 Date Received: 08/07/96

Lab File ID: 0815504.D Data Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 250.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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VALIDATED

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW499

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813503

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816404.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 100 | |
| 111-44-4 | bis(2-Chloroethyl)ether | 20 | U |
| 95-57-8 | 2-Chlorophenol | 20 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 20 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 20 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 20 | U |
| 95-48-7 | 2-Methylphenol | 20 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 26 | |
| 106-44-5 | 4-Methylphenol | 20 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 20 | U |
| 67-72-1 | Hexachloroethane | 20 | U |
| 98-95-3 | Nitrobenzene | 20 | U |
| 78-59-1 | Isophorone | 2 | J |
| 88-75-5 | 2-Nitrophenol | 20 | U |
| 105-67-9 | 2,4-Dimethylphenol | 20 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 20 | U |
| 120-83-2 | 2,4-Dichlorophenol | 20 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 20 | U |
| 91-20-3 | Naphthalene | 20 | U |
| 106-47-8 | 4-Chloroaniline | 20 | U |
| 87-68-3 | Hexachlorobutadiene | 20 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 20 | U |
| 91-57-6 | 2-Methylnaphthalene | 20 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 20 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 20 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 50 | U |
| 91-58-7 | 2-Chloronaphthalene | 20 | U |
| 88-74-4 | 2-Nitroaniline | 50 | U |
| 131-11-3 | Dimethylphthalate | 20 | U |
| 208-96-8 | Acenaphthylene | 20 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 20 | U |
| 99-09-2 | 3-Nitroaniline | 50 | U |
| 83-32-9 | Acenaphthene | 20 | U |

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW499

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813503

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816404.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 50 | U |
| 100-02-7 | 4-Nitrophenol | 50 | U |
| 132-64-9 | Dibenzofuran | 20 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 20 | U |
| 84-66-2 | Diethylphthalate | 20 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 20 | U |
| 86-73-7 | Fluorene | 20 | U |
| 100-01-6 | 4-Nitroaniline | 50 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 50 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 20 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 20 | U |
| 118-74-1 | Hexachlorobenzene | 20 | U |
| 87-86-5 | Pentachlorophenol | 50 | U |
| 85-01-8 | Phenanthrene | 20 | U |
| 120-12-7 | Anthracene | 20 | U |
| 86-74-8 | Carbazole | 20 | U |
| 84-74-2 | Di-n-butylphthalate | 20 | U |
| 206-44-0 | Fluoranthene | 20 | U |
| 129-00-0 | Pyrene | 20 | U |
| 85-68-7 | Butylbenzylphthalate | 20 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 20 | U |
| 56-55-3 | Benzo(a)anthracene | 20 | U |
| 218-01-9 | Chrysene | 20 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 20 | U |
| 117-84-0 | Di-n-octylphthalate | 20 | U |
| 205-99-2 | Benzo(b)fluoranthene | 20 | U |
| 207-08-9 | Benzo(k)fluoranthene | 20 | U |
| 50-32-8 | Benzo(a)pyrene | 20 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 20 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 20 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 20 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

MW499

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813503

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816404.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyz 08/16/96

Injection Volume: 2.0(uL) Dilution Fa :: 2.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 14

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. | Unknown | 9.210 | 12 | J |
| 2. 873949 | Cyclohexanone, 3,3,5-trimeth | 9.430 | 400 | NJ |
| 3. 112367 | Ethane, 1,1'-oxybis[2-ethoxy | 10.120 | 14 | NJ |
| 4. | Unknown | 10.530 | 36 | J |
| 5. | Unknown | 11.120 | 11 | J |
| 6. 16022085 | Bicyclo[3.1.1]heptan-2-one, | 12.120 | 15 | NJ |
| 7. | Chlorinated benzoic acid iso | 14.030 | 20 | J |
| 8. | Unknown | 14.450 | 12 | J |
| 9. | Unknown | 16.310 | 180 | J |
| 10. | Unknown | 16.720 | 10 | J |
| 11. 101100 | Propanoic acid, 2-(3-chlorop | 17.140 | 20 | NJ |
| 12. 76733 | Secobarbital | 19.600 | 11 | NJ |
| 13. | Unknown | 20.470 | 25 | J |
| 14. | Unknown | 24.910 | 38 | J |
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VALIDATED

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW499

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813503

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_025.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/07/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/15/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |

FORM I PEST

VALIDATED 3/96

APD-GWTB01-01
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813508 Date Received: 08/07/96

Lab File ID: 0815503.D Date Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 1 | U |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 0.2 | J |
| 67-64-1 | Acetone | R | 5 | U |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 0.5 | J |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 0.1 | J |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TB01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813508 Date Received: 08/07/96

Lab File ID: 0815503.D Data Analyzed: 08/15/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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VALIDATED

APD-GWT1302-01
8-7-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IFA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814715 Date Received: 08/08/96

Lab File ID: 0815I14.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | | CONCENTRATION (ug/L) | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 0.2 | J |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 1 | J |
| 67-64-1 | Acetone | J | 17 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | | 1 | U |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TB02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960814715 Date Received: 08/08/96

Lab File ID: 0815I14.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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VALIDATED

1LCA VALIDATED

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
ARO-GWTB03-01
TB03
8/8/96

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821605 Date Received: 08/09/96

Lab File ID: 0816506.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 1 | U |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | J 9 | |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 1 | U |
| 107-06-2 | 1,2-Dichloroethane | 0.5 | J |
| 78-93-3 | 2-Butanone | R 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 1 | U |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 1 | U |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 0.1 | J |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |

VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

TB03

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821605 Date Received: 08/09/96

Lab File ID: 0816506.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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APD-GWI-B01-01
8-6-96

1LCA
LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB01

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813507 Date Received: 08/07/96

Lab File ID: 0816505.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | | CONCENTRATION (ug/L) | Q |
|---|---|---|---|---|
| 74-87-3 | Chloromethane | | 0.8 | J |
| 74-83-9 | Bromomethane | | 1 | U |
| 75-01-4 | Vinyl Chloride | | 1 | U |
| 75-00-3 | Chloroethane | | 1 | U |
| 75-09-2 | Methylene Chloride | | 0.7 | J |
| 67-64-1 | Acetone | J | 19 | |
| 75-15-0 | Carbon Disulfide | | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | | 1 | U |
| 67-66-3 | Chloroform | | 0.8 | J |
| 107-06-2 | 1,2-Dichloroethane | | 0.2 | J |
| 78-93-3 | 2-Butanone | R | 5 | U |
| 74-97-5 | Bromochloromethane | | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | | 1 | U |
| 56-23-5 | Carbon Tetrachloride | | 1 | U |
| 75-27-4 | Bromodichloromethane | | 0.2 | J |
| 78-87-5 | 1,2-Dichloropropane | | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | | 1 | U |
| 79-01-6 | Trichloroethene | | 1 | U |
| 124-48-1 | Dibromochloromethane | | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | | 1 | U |
| 71-43-2 | Benzene | | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | | 1 | U |
| 75-25-2 | Bromoform | | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | R | 5 | U |
| 591-78-6 | 2-Hexanone | R | 5 | U |
| 127-18-4 | Tetrachloroethene | | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | | 1 | U |
| 108-88-3 | Toluene | | 1 | U |
| 108-90-7 | Chlorobenzene | | 1 | U |
| 100-41-4 | Ethylbenzene | | 1 | U |
| 100-42-5 | Styrene | | 1 | U |
| 1330-20-7 | Xylenes (total) | | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | | 1 | U |



VALIDATED

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

FB01

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-172 SAS No.: SDG No.: 08103

Lab Sample ID: 960813507 Date Received: 08/07/96

Lab File ID: 0816505.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
|---|---|---|---|---|
| 1. | | | | |
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FORM I LCV-TIC VALIDATED 6/91

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813507

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816407.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 3 | J |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |



VALIDATED

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB01

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813507

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816407.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine



VALIDATED

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

FB01

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813507

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0816407.D

Level: (low/med) LOW Date Received: 08/07/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted:08/12/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/16/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH:_____

Number TICs found: 8

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

| | CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|---|
| 1. | | 1,2-Cyclohexanediol isomer | 9.770 | 4 | XJ |
| 2. | 124072 | Octanoic Acid | 11.550 | 2 | NJ |
| 3. | | Unknown | 13.450 | 3 | J |
| 4. | | Unknown | 16.760 | 13 | J |
| 5. | 134623 | Diethyltoluamide | 17.030 | 6 | NJ |
| 6. | | Unknown | 17.960 | 3 | J |
| 7. | 544638 | Tetradecanoic acid | 18.930 | 4 | NJ |
| 8. | 80057 | Phenol, 4,4'-(1-methylethyli | 23.110 | 6 | NJ |
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VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB01

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-172 SDG No.: 08103

Matrix: (soil/water) WATER Lab Sample ID: 960813507

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P2081296_029.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/07/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/12/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/16/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2 | Aroclor-1016 | 1.0 | U |
| 11104-28-2 | Aroclor-1221 | 2.0 | U |
| 11141-16-5 | Aroclor-1232 | 1.0 | U |
| 53469-21-9 | Aroclor-1242 | 1.0 | U |
| 12672-29-6 | Aroclor-1248 | 1.0 | U |
| 11097-69-1 | Aroclor-1254 | 1.0 | U |
| 11096-82-5 | Aroclor-1260 | 1.0 | U |



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1LCA

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
APD-GWFB02-01

FB02

8/8/96

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821604 Date Received: 08/09/96

Lab File ID: 0816507.D Date Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

| CAS NO. | COMPOUND | CONCENTRATION (ug/L) | Q |
|---|---|---|---|
| 74-87-3 | Chloromethane | 0.9 | J |
| 74-83-9 | Bromomethane | 1 | U |
| 75-01-4 | Vinyl Chloride | 1 | U |
| 75-00-3 | Chloroethane | 1 | U |
| 75-09-2 | Methylene Chloride | 2 | U |
| 67-64-1 | Acetone | J 21 | |
| 75-15-0 | Carbon Disulfide | 1 | U |
| 75-35-4 | 1,1-Dichloroethene | 1 | U |
| 75-34-3 | 1,1-Dichloroethane | 1 | U |
| 156-59-2 | cis-1,2-Dichloroethene | 1 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 1 | U |
| 67-66-3 | Chloroform | 0.8 | J |
| 107-06-2 | 1,2-Dichloroethane | 1 | U |
| 78-93-3 | 2-Butanone | R 5 | U |
| 74-97-5 | Bromochloromethane | 1 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 1 | U |
| 56-23-5 | Carbon Tetrachloride | 1 | U |
| 75-27-4 | Bromodichloromethane | 0.2 | J |
| 78-87-5 | 1,2-Dichloropropane | 1 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 1 | U |
| 79-01-6 | Trichloroethene | 1 | U |
| 124-48-1 | Dibromochloromethane | 1 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 1 | U |
| 71-43-2 | Benzene | 1 | U |
| 10061-02-6 | trans-1,3-Dichloropropene | 1 | U |
| 75-25-2 | Bromoform | 1 | U |
| 108-10-1 | 4-Methyl-2-Pentanone | 5 | U |
| 591-78-6 | 2-Hexanone | 5 | U |
| 127-18-4 | Tetrachloroethene | 1 | U |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 1 | U |
| 106-93-4 | 1,2-Dibromoethane | 1 | U |
| 108-88-3 | Toluene | 0.1 | J |
| 108-90-7 | Chlorobenzene | 1 | U |
| 100-41-4 | Ethylbenzene | 1 | U |
| 100-42-5 | Styrene | 1 | U |
| 1330-20-7 | Xylenes (total) | 1 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 1 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 1 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 1 | U |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 1 | U |

1LCE

LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

FB02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 6/91

Lab Code: IEA Case No.: 1589-175 SAS No.: SDG No.: 08216

Lab Sample ID: 960821604 Date Received: 08/09/96

Lab File ID: 0816507.D Data Analyzed: 08/16/96

Purge Volume: 25.0 (mL) Dilution Factor: 1.0

Number TICs found: 0

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. (ug/L) | Q |
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

VALIDATED

CLIENT SAMPLE NO.
AQ-GWFB02-01
FB02
8-8-96

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821604

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815410.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 108-95-2 | Phenol | 10 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 10 | U |
| 95-57-8 | 2-Chlorophenol | 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 |
| 95-48-7 | 2-Methylphenol | 10 | U |
| 108-60-1 | 2,2'-oxybis(1-Chloropropane) | 10 | U |
| 106-44-5 | 4-Methylphenol | 10 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 10 | U |
| 67-72-1 | Hexachloroethane | 10 | U |
| 98-95-3 | Nitrobenzene | 10 | U |
| 78-59-1 | Isophorone | 10 | U |
| 88-75-5 | 2-Nitrophenol | 10 | U |
| 105-67-9 | 2,4-Dimethylphenol | 10 | U |
| 111-91-1 | bis(2-Chloroethoxy)methane | 10 | U |
| 120-83-2 | 2,4-Dichlorophenol | 10 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 10 | U |
| 91-20-3 | Naphthalene | 10 | U |
| 106-47-8 | 4-Chloroaniline | 10 | U |
| 87-68-3 | Hexachlorobutadiene | 10 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 10 | U |
| 91-57-6 | 2-Methylnaphthalene | 10 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 10 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 10 | U |
| 95-95-4 | 2,4,5-Trichlorophenol | 25 | U |
| 91-58-7 | 2-Chloronaphthalene | 10 | U |
| 88-74-4 | 2-Nitroaniline | 25 | U |
| 131-11-3 | Dimethylphthalate | 10 | U |
| 208-96-8 | Acenaphthylene | 10 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 10 | U |
| 99-09-2 | 3-Nitroaniline | 25 | U |
| 83-32-9 | Acenaphthene | 10 | U |

1C

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB02

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821604

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815410.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 51-28-5 | 2,4-Dinitrophenol | 25 | U |
| 100-02-7 | 4-Nitrophenol | 25 | U |
| 132-64-9 | Dibenzofuran | 10 | U |
| 121-14-2 | 2,4-Dinitrotoluene | 10 | U |
| 84-66-2 | Diethylphthalate | 10 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 10 | U |
| 86-73-7 | Fluorene | 10 | U |
| 100-01-6 | 4-Nitroaniline | 25 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 25 | U |
| 86-30-6 | N-Nitrosodiphenylamine (1) | 10 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 10 | U |
| 118-74-1 | Hexachlorobenzene | 10 | U |
| 87-86-5 | Pentachlorophenol | 25 | U |
| 85-01-8 | Phenanthrene | 10 | U |
| 120-12-7 | Anthracene | 10 | U |
| 86-74-8 | Carbazole | 10 | U |
| 84-74-2 | Di-n-butylphthalate | 10 | U |
| 206-44-0 | Fluoranthene | 10 | U |
| 129-00-0 | Pyrene | 10 | U |
| 85-68-7 | Butylbenzylphthalate | 10 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 10 | U |
| 56-55-3 | Benzo(a)anthracene | 10 | U |
| 218-01-9 | Chrysene | 10 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 10 | U |
| 117-84-0 | Di-n-octylphthalate | 10 | U |
| 205-99-2 | Benzo(b)fluoranthene | 10 | U |
| 207-08-9 | Benzo(k)fluoranthene | 10 | U |
| 50-32-8 | Benzo(a)pyrene | 10 | U |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 10 | U |
| 53-70-3 | Dibenz(a,h)anthracene | 10 | U |
| 191-24-2 | Benzo(g,h,i)perylene | 10 | U |

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VALIDATED

CLIENT SAMPLE NO.

FB02

ab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821604

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 0815410.D

Level: (low/med) LOW Date Received: 08/09/96

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 08/13/96

Concentrated Extract Volume: 1000(uL) Date Analyzed: 08/15/96

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:_____

Number TICs found: 5

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

| CAS NUMBER | COMPOUND NAME | RT | EST. CONC. | Q |
|---|---|---|---|---|
| 1. 872504 | 2-Pyrrolidinone, 1-methyl- | 9.360 | 8 | NJ |
| 2. 99934 | Acetophenone, 4'-hydroxy- | 15.270 | 3 | NJ |
| 3. 134623 | Diethyltoluamide | 17.030 | 5 | NJ |
| 4. 80057 | Phenol, 4,4'-(1-methylethyli | 23.110 | 2 | NJ |
| 5. | Unknown | 28.110 | 2 | J |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |
| 21. | | | | |
| 22. | | | | |
| 23. | | | | |
| 24. | | | | |
| 25. | | | | |
| 26. | | | | |
| 27. | | | | |
| 28. | | | | |
| 29. | | | | |
| 30. | | | | |

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

VALIDATED

CLIENT SAMPLE NO.

FB02

Lab Name: INDUSTRIAL & ENVIRONMENTA Contract: SOW 1/91

Lab Code: IEA Case No.: 1589-175 SDG No.: 08216

Matrix: (soil/water) WATER Lab Sample ID: 960821604

Sample wt/vol: 1000 (g/mL) ML Lab File ID: P1081496_040.D

% Moisture: _____ decanted: (Y/N)___ Date Received: 08/09/96

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 08/14/96

Concentrated Extract Volume: 10000(uL) Date Analyzed: 08/17/96

Injection Volume: 1.0(uL) Dilution Factor: 1.0

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

| CAS NO. | COMPOUND | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | Q |
|---|---|---|---|
| 12674-11-2------ | Aroclor-1016 | 1.0 | U |
| 11104-28-2------ | Aroclor-1221 | 2.0 | U |
| 11141-16-5------ | Aroclor-1232 | 1.0 | U |
| 53469-21-9------ | Aroclor-1242 | 1.0 | U |
| 12672-29-6------ | Aroclor-1248 | 1.0 | U |
| 11097-69-1------ | Aroclor-1254 | 1.0 | U |
| 11096-82-5------ | Aroclor-1260 | 1.0 | U |

F

# F

# MONTGOMERY WATSON ANALYTICAL RESULTS - METALS

## Data Validation Narrative

Project Name ACS
Project Number 4077.0076

September 22, 1996
Login # 13478 & 13479

This deliverable package prepared by Montgomery Watson Laboratories includes 12+22 total and dissolved groundwater samples for CLP metals (no $CN^-$) analysis. The data was validated according to the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (2/94).

This data is acceptable for use with the following comments:

Blanks — Sample runs included method blanks (ICB/CCB), prep blanks (PB) and field blanks (FB). Metals detected in blanks include aluminum, copper, iron, nickel, zinc, lead, and potassium. Samples with these metals detected at concentrations less than 5 times the greatest associated blank concentration are flagged "U" (undetected at the reported sample concetration). In the case of iron, copper, and zinc, the blank result may also have caused QC exceedences for duplicate spike and/or ICP serial dilution criteria.

Beryllium — Sample 1378-07 spike recovery of 127% exceeded the QC limits of 75-125%. Associated samples are flagged "N" by the lab and "J" for validation.

Iron — Duplicate QC was exceeded for sample 1378-08. Associated samples are flagged "*" by the lab and "J" for validation.

Manganese — Duplicate QC was exceeded for sample 1379-05. Associated samples are flagged "*" by the lab and "J" for validation. ICP serial dilution QC was exceeded on sample 1379-11 (11.8% difference); all associated samples are flagged "E" by the lab and "J" for validation.

Nickel — Duplicate QC was exceeded for sample 1379-05. Associated samples are flagged "*" by the lab and "J" for validation.

"E" Flag — The software used to generate the CLP forms (Telecations) contains a bug that results in the flag "E" being applied on the Form I without reason, in this case for Sb, Be, and Cd. The "E" flag is to be applied for interference problems based on either ICP serial dilution (%D >10%) or furnace QC criteria (a sample failing two post-digestion spikes 85-115% recovery), neither of which was a problem for these GFAA metals. The ICP Fe analysis of 1379-11 failed Yttrium recovery

criteria, but was not re-analyzed because 1379-04 was also analyzed (i.e., 1379-11 was redundant and not required by the SOW QC criteria).

Additional flags associated with this data include "S" and "W", indicating furnace post digestion spike QC criteria was exceeded. "S" indicates the sample was rerun by method of standard addition. "W" indicates the same criteria was exceeded, but that sample absorbance was less than 50% spike absorbance.

Overall data quality was good, with few significant problems associated with the data. Most out of control QC criteria was only slightly out of range (e.g., PDS recoveries outside QC limits were generally between 75-84%, the spike exceedance for Be was 127%, etc.). Reporting problems with the software package were due to the large size of the SDG and were all resolved.

JAH/jah
J:\MWATS\DMGMT\L1378.DOC
4522.0076

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MWL Contract: 4077.0073

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SD1378

SOW No.: 3/90

| Sample Description | Lab Sample ID. | EPA Sample No. | LIMS Sample ID. |
|---|---|---|---|
| APD-GWFB01-01 | 1379-006 | 137906 | L13479-006 |
| APD-GWMW46-01 | 1379-007 | 137907 | L13479-007 |
| APD-GWMW49-01 Filtered | 1379-008 | 137908 | L13479-008 |
| APD-GWMW49-91 Filtered | 1379-009 | 137909 | L13479-009 |
| APD-GWMW37-01 Filtered | 1379-010 | 137910 | L13479-010 |
| APD-GWMW48-01 Filtered | 1379-011 | 137911 | L13479-011 |
| APD-GWMW39-01 Filtered | 1379-012 | 137912 | L13479-012 |
| APD-GWFB-01 Filtered | 1379-013 | 137913 | L13479-013 |
| APD-GWMW46-01 Filtered | 1379-014 | 137914 | L13479-014 |
| APD-GWMW43-01 | 1379-015 | 137915 | L13479-015 |
| APD-GWMW44-01 | 1379-016 | 137916 | L13479-016 |
| APD-GWMW45-01 | 1379-017 | 137917 | L13479-017 |
| APD-GWFB02-01 | 1379-018 | 137918 | L13479-018 |
| APD-GWMW43-01 Filtered | 1379-019 | 137919 | L13479-019 |
| APD-GWMW44-01 Filtered | 1379-020 | 137920 | L13479-020 |
| APD-GWMW45-01 Filtered | 1379-021 | 137921 | L13479-021 |
| APD-GWFB02-01 Filtered | 1379-022 | 137922 | L13479-022 |

Were ICP interelement corrections applied? Yes/No ____

Were ICP background corrections applied? Yes/No ____

If yes - were raw data generated before application of background corrections? Yes/No ____

Comments:

Release of the data contained in this hardcopy data package has been authorized by the Laboratory manager or the Manager's designee, as verified by the following signature.

Lab Manager: _____

Date: _____

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MWL Contract: 4077.0073

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: SD1378

SOW No.: 3/90

| Sample Description | Lab Sample ID. | EPA Sample No. | LIMS Sample ID. |
|---|---|---|---|
| APD-GWMW38-01 | 1378-001 | 137801 | L13478-001 |
| APD-GWMW40-01 | 1378-002 | 137802 | L13478-002 |
| APD-GWMW47-01 | 1378-003 | 137803 | L13478-003 |
| APD-GWMW47-91 | 1378-004 | 137804 | L13478-004 |
| APD-GWMW41-01 | 1378-005 | 137805 | L13478-005 |
| APD-GWMW42-01 | 1378-006 | 137806 | L13478-006 |
| APD-GWMW38-01 Filtered | 1378-007 | 137807 | L13478-007 |
| APD-GWMW40-01 Filtered | 1378-008 | 137808 | L13478-008 |
| APD-GWMW47-01 Filtered | 1378-009 | 137809 | L13478-009 |
| APD-GWMW47-91 Filtered | 1378-010 | 137810 | L13478-010 |
| APD-GWMW41-01 Filtered | 1378-011 | 137811 | L13478-011 |
| APD-GWMW42-01 Filtered | 1378-012 | 137812 | L13478-012 |
| APD-GWMW49-01 | 1379-001 | 137901 | L13479-001 |
| APD-GWMW49-91 | 1379-002 | 137902 | L13479-002 |
| APD-GWMW37-01 | 1379-003 | 137903 | L13479-003 |
| APD-GWMW48-01 | 1379-004 | 137904 | L13479-004 |
| APD-GWMW39-01 | 1379-005 | 137905 | L13479-005 |

Were ICP interelement corrections applied? Yes/No ____

Were ICP background corrections applied? Yes/No ____

If yes - were raw data generated before application of background corrections? Yes/No ____

Comments:

Release of the data contained in this hardcopy data package has been authorized by the Laboratory manager or the Manager's designee, as verified by the following signature.

Lab Manager: _____

Date: _____

[V-CLP-1]
7/87

MONTGOMERY WATSON

# CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS
- [ ] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [x] OTHER

TURNAROUND
- [x] ~~2 WEEKS~~ (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: ACS
PROJECT #: 4077.0073
CITY: GRIFFITH
STATE: INDIANA
SAMPLER(S): [signature]

| COLLECTION DATE | COLLECTION TIME | GRAB COMP | SAMPLE ID | NO. OF CONTAINERS | Total Metals | Dissolved Metals | Dissolved Metals | REMARKS | LAB USE ONLY MATRIX | LAB USE ONLY LAB NO |
|---|---|---|---|---|---|---|---|---|---|---|
| 8-7-96 | 0800 | G | APD-GW mw38-01 1 | 2 | X | X | | 9-32715,16 | 1 | 13478-001 |
| 8-7-96 | 1000 | G | APD-GW mw40-01 1 | 2 | X | X | | 9-32723,24 | | -002 |
| 8-7-96 | 1145 | G | APD-GW mw47-01 1 | 2 | X | X | | 9-32631,32 | | -003 |
| 8-7-96 | 1145 | G | APD-GW mw47-91 1 | 2 | X | X | | 9-32655,56 | | -004 |
| 8-7-96 | 1430 | G | APD-GW mw41-01 1 | 2 | X | X | | 9-32731 32 | | -005 |
| 8-7-96 | 1540 | G | APD-GW mw42-01 1 | 2 | X | X | | 9-32739,40 | | -006 |
| | | | APD-GW MW 38-01 filtered | 1 | | | X | | | 007 |
| | | | APD-GW MW 40-01 filtered | 1 | | | X | | | 008 |
| | | | APD-GW MW 47-01 filtered | 1 | | | X | | | 009 |
| | | | APD-GW MW 47-91 filtered | 1 | | | X | | | 010 |
| | | | APD-GW-MW 41-01 filtered | 1 | | | X | | ✓ | 011 |
| | | | APD-GW mw 42-01 filtered | 1 | | | X | | | 012 |

SPECIAL INSTRUCTIONS

TAMPER EVIDENT SEAL INTACT? ✓ YES ___ NO ___ NOT PRESENT
SEAL NO. 92-000,40
SAMPLES RECEIVED ON ICE? ✓ YES ___ NO TEMP ___ °C

PROJ. MGR. PETE VAN

| | SIGNATURE | DATE | TIME | | SIGNATURE | DATE | TIME |
|---|---|---|---|---|---|---|---|
| RELINQUISHED BY | [signature] | 8-7-96 | 1730 | RECEIVED BY: | | | |
| RELINQUISHED BY | | | | RECEIVED BY: | | | |
| RELINQUISHED BY | | | | RECEIVED BY: | | | |
| RELINQUISHED BY | | | | RECEIVED FOR LABORATORY BY | [signature] | 8/8/96 | 1:00 pm |

C-O-C No. 013766

NAME OF COURIER: FED EX
AIRBILL NUMBER: 3692437405

MONTGOMERY WATSON

# CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:
- [ ] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [x] OTHER:

TURNAROUND
- [ ] ~~2 WEEKS~~ (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: ACS
PROJECT #: 4677-0073
CITY: GRIFFITH
STATE: Indiana
SAMPLER(S): [signature]

| COLLECTION DATE | COLLECTION TIME | GRAB / COMP | SAMPLE ID | NO OF CONTAINERS | CLP Total metals | ~~Dissolved metals~~ | Dissolved metals | | | | | | REMARKS | LAB USE ONLY MATRIX | LAB USE ONLY LAB NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-8-96 | 0845 | | APD-GW MW43-01 1 | 2 | ✓ | ✓ | | | | | | | 9-32747,48 | 1 | 13479-015 |
| 8-8-96 | 0930 | | APD-GW MW44-01 1 | 2 | ✓ | ✓ | | | | | | | 9-32607,08 | | -016 |
| 8-8-96 | 1015 | | APD-GW MW45-01 1 | 2 | ✓ | ✓ | | | | | | | 9-32615,16 | | -017 |
| 8-8-96 | 1045 | | APD-GW FB02-01 1 | 8 | ✓ | ✓ | | | | | | | 9-32679,80 | | -018 |
| 8-8 | | | APD GW MW 43-01 filtered | 1 | | | ✓ | | | | | | | | -019 |
| 8-8 | | | APD GW MW 44-01 filtered | 1 | | | ✓ | | | | | | | | -020 |
| 8-8 | | | APD GW MW 45-01 filtered | 1 | | | ✓ | | | | | | | | -021 |
| 8-8 | | | APD GW FB 02-01 filtered | 1 | | | ✓ | | | | | | | ✓ | -022 |

SPECIAL INSTRUCTIONS: CLP

TAMPER EVIDENT SEAL INTACT? ___ YES ___ NO X NOT PRESENT
SEAL NO.: ___
SAMPLES RECEIVED ON ICE? X YES ___ NO TEMP: ___ °C

PROJ. MGR.: PETE VAGT

| | SIGNATURE | DATE | TIME | | SIGNATURE | DATE | TIME |
|---|---|---|---|---|---|---|---|
| RELINQUISHED BY | [signature] | 8-9-96 | 0845 | RECEIVED BY | | | |
| RELINQUISHED BY | | | | RECEIVED BY | | | |
| RELINQUISHED BY | | | | RECEIVED BY | | | |
| RELINQUISHED BY | | | | RECEIVED FOR LABORATORY BY | [signature] | 8/9/96 | 2:15 pm |

C-O-C No. 013640

NAME OF COURIER: FED EX Hand Delivery
AIRBILL NUMBER: ___

MONTGOMERY WATSON

# CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:
- [ ] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TURNAROUND
- [ ] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: ACS
PROJECT #: 4077.0073
CITY:
STATE:
SAMPLER(S):

| COLLECTION DATE | COLLECTION TIME | GRAB / COMP | SAMPLE ID | NO. OF CONTAINERS | Dissolved Metals | | | | | | | | REMARKS | LAB USE ONLY MATRIX | LAB USE ONLY LAB NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-6 | | | APD-GW MW 39-01 Filtered | 1 | X | | | | | | | | | 1 | 13479-012 |
| 8-6 | | | APD-GW FB01-01 " | 1 | X | | | | | | | | | ↓ | -013 |
| 8-5 | | | APD-GW MW 46-01 " | 1 | X | | | | | | | | | ↓ | -014 |

SPECIAL INSTRUCTIONS:

RECEIVED: [x] INTACT [x] ON ICE TEMP _____ °F

PROJ. MGR.:

| SIGNATURE | PRINT NAME | COMPANY / TITLE | DATE | TIME |
|---|---|---|---|---|
| RELINQUISHED BY: | | | | |
| RECEIVED BY: | | | | |
| RELINQUISHED BY: | | | | |
| RECEIVED BY: L. Collins | L. Collins | MW/Lab tech | 8/8/96 | 2:00 pm |

C-O-C No. 12894

NAME OF COURIER: _____

AIRBILL NUMBER: _____

MONTGOMERY WATSON

# CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:
- [ ] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [x] OTHER:

TURNAROUND:
- [x] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: ACS
PROJECT #: 4077.0073
CITY: Griffith
STATE: Indiana
SAMPLER(S): [signature]

| COLLECTION DATE | COLLECTION TIME | GRAB COMP | SAMPLE ID | NO. OF CONTAINERS | CLP Total Metals | CLP Dissolved Metals | | | | | | | REMARKS | LAB USE ONLY MATRIX | LAB USE ONLY LAB NO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-6-96 | 1002 | Grab | APD-GWMW49-01 | 2 | x | x | | | | | | | 9-32647,48 | 1 | 13479-001 |
| 8-6-96 | 1100 | | APD-GWMW49-91 | 2 | x | x | | | | | | | 9-32663,64 | | -002 |
| 8-6-96 | 11.30 | | APD-GWMW37-01 | 2 | x | x | | | | | | | 9-32707,08 | | -003 |
| 8-6-96 | 14.00 | | APD-GWMW48-01 | 2 | x | x | | | | | | | 9-32639,40 | | -004 |
| 8-6-96 | 1615 | | APD-GWMW39-01 | 2 | x | x | | | | | | | 9-32755,56 | | -005 |
| 8-6-96 | 1500 | | APD-GWFB01-01 | 2 | x | x | | | | | | | 9-32671,72 | | -006 |
| 8-5-96 | 1530 | | APD-GWMW46-01 | 2 | x | x | | | | | | | 9-32623,24 | | -007 |
| 8-6 | | | APD-GWMW49-01 Filtered | | | | X | | | | | | | | -008 |
| 8-6 | | | APD-GWMW49-91 " | | | | X | | | | | | | | -009 |
| 8-6 | | | APD-GWMW37-01 " | | | | X | | | | | | | | -010 |
| 8-6 | | | APD-GWMW48-01 " | | | | X | | | | | | | | -011 |

SPECIAL INSTRUCTIONS

CLP

COC Seal No. 92-00130

TAMPER EVIDENT SEAL INTACT? [✓] YES ___ NO ___ NOT PRESENT
SEAL NO.: ___
SAMPLES RECEIVED ON ICE? [✓] YES ___ NO TEMP. ___ °C

PROJ. MGR.: Pete Vast

| | SIGNATURE | DATE | TIME | | SIGNATURE | DATE | TIME |
|---|---|---|---|---|---|---|---|
| RELINQUISHED BY | [signature] | 8-6-96 | 1800 | RECEIVED BY: | | | |
| RELINQUISHED BY | | | | RECEIVED BY: | | | |
| RELINQUISHED BY | | | | RECEIVED BY: | | | |
| RELINQUISHED BY | | | | RECEIVED FOR LABORATORY BY | [signature] | 8/8/96 | 2:00pm |

C-O-C No. 013764

NAME OF COURIER: Fed Ex
AIRBILL NUMBER: 3692437534

SD 1375.I1A

ICP

I HOLDTIME - Sampled 8/5-8, Run 9/5, 11, 12, 13, 16, 17, 18/96

II CALIBRATION

Curve - Blk + 2-3 stds

ICV/CCV - 1/10, 90-110%

CRI - 37-152% Rec

III BLANKS

| | Al* | Co | Cu* | Fe* (See Back) | Ni* (1st run CCB4) | Zn* | Pb (Not ICP) | K (Not ICP) |
|---|---|---|---|---|---|---|---|---|
| ICB/CCB | 78 | -13 | 20.5 | $\boxed{843}$ | 33.5 | - | | |
| PB | 75 | - | 13.5 | 138 | - | 20.0 | | |
| 5x | 390 | 169 | 102.5 | 4,215 | 167.5 | 100 | 15.5 | 520 |
| FB T | 76 | | 13.5 | 37.5 | | - | 3.1 | - |
| D | 60.5 | | 18.5 | 30 | | 10 | 3.0 | 104 |

Flag "U" if < 5x value

IV ICP INTERFERENCE CHECK SAMPLE

90-110 ✓

% Rec 80-120% (Mg, Mn, Cu) ✓

V SPIKES

137801 - 87-105% ✓ Fe ok

137904 - 11-106%

1378-07 - 84-120% Fe ok ✓

139711 66-118

VI DUPLICATES (*) Filtered Mn, Ni, total Fe, Zn — No flag

137802D - < 25 RPD

137808 <25% except Cu ± IDL(10) also in Blk; Fe - (in Blk)* Zn - 75.5, <10 ! < 5x Blk

137905 - <25% except Mn 22.2% Ni 129% (Blk)

137912 <25% or ICRQ

VII LCS

80-120% ✓

VIII ICP SERIAL DILUTIONS (E) on Mn only

1370904 <10% D

137801 ~~90-110%~~ if Spl > 50x IDL ✓

13

Cu, Fe shows Blk

IX 137911 - Mn = 11.8% Fe >50x, "Δ" dilution No good (yt surg low) but not rerun

E flag not appropriate

IX SRV

Calcs + transcriptions 10% check

X OVERALL - Data acceptable - Flags for blanks (U)

MB 72

PB = 138 (690)

Fe CCBy = 843 (4215)

| | | |
|---|---|---|
| 1378-01 | 6440 | |
| -02 | 1190 | * |
| -05 | 1670 | * |
| -06 | 3340 | * |
| -07 | 6450 | |
| -08 | 1460 | * |
| -10 | 88 | * |
| -11 | 1680 | * |
| -12 | 1950 | * |
| 1379-01 | 20,100 | |
| -02 | 20,100 | |
| -03 | 1240 | * |
| -04 | 30,800 | |
| -05 | 9710 | |
| -06 | 38 | * |
| -07 | 21,700 | |
| -08 | 14,600 | |
| -09 | 18,800 | |

PB = 145 (725)

| | | |
|---|---|---|
| -03 | 254 | * |
| -04 | 346 | * |
| -09 | 163 | * |

CCB, = 31

B < 20

| | | |
|---|---|---|
| -11 | 30300 | |
| -12 | 7690 | |
| -13 | 30 | * |
| -14 | 21,900 | |
| -15 | 13,900 | |
| -16 | 1450 | |
| -17 | 9570 | |
| -18 | 23 | |
| -19 | 7290 | |
| -20 | 2050 | |
| -21 | 8050 | |
| -22 | <20 | |

-10 227 *

K

I Holdtime - Sampled 8/5-8 Run 8/26

II CALIBRATION

Curve - Blk + 3 Stds r > .995

ICV/CCV - 1/10, 90-110%

CRA - 100.4%

III BLANKS

ICB/CCB - 1/10, < 100

PB <100 ug/L

IV SPIKES

| | | | |
|---|---|---|---|
| 1378-01 | 102.9% | 1378-07 | 101.6% |
| 137904 | 95.0% | 1379-11 | 99.1% |

V DUPLICATES

| | | | |
|---|---|---|---|
| 1378-02 | 6.5 RPD | 1378-08 | ± CRDL |
| 137905 | 1.7 RPD | 1379-012 | 1.6 RPD |

VI LCS

106.9%

VII SRV

Calcs + transcriptions checked

VIII OVERALL

Data acceptable

Sb

I HOLDTIME- Sampled 8/5-8, Run 9/5, 9/6

II CALIBRATION

Curve - Blk + 3 Stds

ICV/CCV - 1/10, 90-110%

CRA - 99.3%, 112.1%

III BLANKS

ICB/CCB - 1/10, < 2

PB < 2 ug/L

IV SPIKES

137861 99.2% 137807 94.9%

137904 95.6% 137911 101.5%

V DUPLICATES

137862 ND 137808 ND

137905 ND 137912 ND

VI LCS

106.5, 96.8%

VII FURNACE QC

Dup Inj < 20% RSD on < CRDL

PDS 85-115%

VIII OVERALL

Data acceptable. "E" flag on Form 1's due to telecations bug

As

I HOLDTIME - Sampled 8/5-8 Run 8/27, 8/29

II CALIBRATION

Curve = Blk + 3 Stds r > 0.995

ICV/CCV - 1/10, 90-110%

CRA - 107.7% 98.0%

III BLANKS

ICB/CCB - 1/10, < 1 µg/L

PB - < 1

IV SPIKES

137801 97.7% 137807 100.6%

137904 92.5% 137911 99.2%

V DUPLICATES

137802 1.3 / <1 > ± CRDL 137808 ND

137905 3.4 RPD 137912 1.56 / <1 > ± CRDL

VI LCS

102.6%, 94.8%, 105.4%, 108.4%

VII FURNACE QC

Dup Inj < 20% RSD

PDS 85-115% on MSA (1379-11, -14, -15, -16, -19, -20, -21)

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data acceptable

Be

I HOLDTIME - Sampled 8/5-8/96, Run 9-9, 9-10

II CALIBRATION

Curve - Blk + 3 stds, r > 0.995 -

ICV/CCV - 1/10, 90-110 %

CRA - 102, 98.0 %

III BLANKS

ICB/CCB - 1/10, <0.2 ug/L

PB - <0.2

IV SPIKES (N)

1378-01 - 122%  1378-07  127-0/1.00 = 127% (N)

1379-04 119%  1379-11 117 %

Tolerances flagged all as "E" in error

V DUPLICATES

1378-02 4.9 RPD  1378-0 13.3 RPD

1379-05 ND  1379-12 ND

VI LCS

99 %, 94 %

VII FURNACE QC

Dup Inj <20% RSD or < CRQL

PDS 85-115 %

VIII SRV

Calcs + Transcriptions checked

IX OVERALL

Data acceptable

(2)

I HOLDTIME - Sampled 8/5-8, Run 9/5, 6

II CALIBRATION

Curve - Blk + 3 Stds

ICV/CCV - 1/10, 90-110%

CRA 96%, 102%

III BLANKS

ICB/CCB - 1/10, < .2 mg/L

PB - < 0.2

IV SPIKES

| | | | | | |
|---|---|---|---|---|---|
| 1378-01 | 105% | ✓ | 137807 | 105% | ✓ |
| 1379-04 | 111% | ✓ | 1379-11 | 111% | ✓ |

V DUPLICATES

| | | | |
|---|---|---|---|
| 137802 | ND | 137808 | ND |
| 137905 | ND | 137912 | ND |

VI LCS

98.0, 100%

VII FURNACE QC

Dup Inj < 20% RSD or < CRDL

PDS 85-115% or MSA (137903 (S) ✓)

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data acceptable - Telecations bug flagged all "E" in error

# Pb

I HOLDTIME- Sampled 8/5-8, Run 8/30, 9/4, 9/5, 9/10

II CALIBRATION

Curve - Blk + 4 stds, r > .995 ✓

ICV/CCV - 1/10, 90-110%

CRA - 100%, 101.3%, 103.3%, 100%

III BLANKS

ICB/CCB - 1/10, < 1.5 ug/L

PB - < 1.5 ug/L

FB - Total 3.1, Filtered 3.0 ug/L  15 ug/L

IV SPIKES

137801 99.6  137807 91.6%

137904 117.8%  137911 88.8%

V DUPLICATES

137802 19.2 RPD  137808 6.2 RPD

137905 ND  137912 ND

VI LCS

102.6, 94.8, 105.4, 108.4%

VII FURNACE QC

Dup Inj 8 < 20% RSD or < CRDL

PDS 85-115% or MSA (1378-03,06, ALL 74-84% Rec on Spike, 1379-03, -04, -07, -08, -09, -10, -14, -15, -17, -19)

VIII SRV  $\boxed{1379\text{-}21 = W}$ 84.7% R

Calcs + Transcriptions checked

IX OVERALL

Data acceptable except all results < 15 ug/L flagged "U" due to blanks

Se

I HOLDTIME - Sampled 8/5-8/96, Run 8/30, 9/4, 9/5

II CALIBRATION

Curve - Blk + 4 Stds r > 0.995

ICV/CCV - 1/10, 90-110%

CRA - 102.2%, 103.4%, 107.8%

III BLANKS

ICB/CCB - 1/10, < 2.0 ug/L

PB - < 2.0

FBs - < 2

IV SPIKES

| | | | |
|---|---|---|---|
| 137801 | 105.9% | 137807 | 95.9% |
| 137904 | 87.7% | 137911 | 85.0% |

V DUPLICATES

| | | | |
|---|---|---|---|
| 137802 | ND | 137808 | ND |
| 137905 | ND | 137912 | ND |

VI LCS

104.8, 94.8, ~~98.3~~

VII FURNACE QC

Dup Inj < 20% RSD or < CRDL

PDS - 85-115% or MSA (1378-10, 1379-04, -14, -15, -19, -21)
W - 1378-04 (84.7% R.)

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data acceptable

T1

I HOLDTIME- Sampled 8/5-8/96 Run 9/9

II CALIBRATION

Curve- Blk + 3 Stds r > 0.995

ICV/CCV- 1/10, 90-110%

CRA 108.8%

III BLANKS

ICB/CCB- 1/10, <1.0

PB - <1

IV SPIKES

| | | | |
|---|---|---|---|
| 137801 | 100.8% | 137807 | 99.9% |
| 137904 | 95.0% | 137911 | 95.3% |

V DUPLICATES

| | | | |
|---|---|---|---|
| 137802 | ND | 137808 | ND |
| 137905 | 1.02 / <1 > ±CRDL | 137912 | <1.0 / 1.1 > ±CRDL |

VI LCS

107.7 %

VII FURNACE QC

Dup Inj ≤20% RSD or <CRDL

PDS 85-115 %

VIII SRV

Calcs + transcriptions checked

IX OVERALL

Data Acceptable, No flags

Hg

I HOLDTIME - Sampled 8/5-8 Run 8/21

II CALIBRATION

Curve - Blk + 4 Stds . r > 0.995

ICV/CCV - 1/10 85-115 %

CRA - 125 %

III BLANKS

ICB/CCB - 1/10, < 0.20

FB - < 0.2

IV SPIKES

| | | | |
|---|---|---|---|
| 137801 | 104 % | 137807 | 101.0 % |
| 137904 | 91.0 % | 137911 | 91.0 % |

V DUPLICATES

| | | | |
|---|---|---|---|
| 137802 | ND | 137808 | ND |
| 137905 | ND | 137912 | ND |

VI LCS

98.7 %

VII SRV

Calcs + transcriptions checked

VIII OVERALL

Data acceptable

APD-GMW 39-01

8-7-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

137801

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-001

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 Total

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 118 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 3.9 | B | | F |
| 7440-39-3 | Barium | 36.5 | B | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | E N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 63500 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 12.0 | B | | P |
| 7439-89-6 | Iron | J 6440 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 22000 | | | P |
| 7439-96-5 | Manganese | J 511 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 494 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 5130 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed to JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW38-01 F

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137807

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-007

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 113 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 3.2 | B | | F |
| 7440-39-3 | Barium | 38.5 | B | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | E N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 64000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 13.0 | B | | P |
| 7439-89-6 | Iron | J 6450 | | E* | P |
| 7439-92-1 | Lead | U 1.6 | B | | F |
| 7439-95-4 | Magnesium | 22400 | | | P |
| 7439-96-5 | Manganese | J 516 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 499 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 5580 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW10-01

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137802

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-002

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 Total

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 406 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.3 | B | | F |
| 7440-39-3 | Barium | 26.0 | B | | P |
| 7440-41-7 | Beryllium | J 0.21 | B | E N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 30000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 12.5 | B | | P |
| 7439-89-6 | Iron | UJ 1190 | | E* | P |
| 7439-92-1 | Lead | U 10.8 | | | F |
| 7439-95-4 | Magnesium | 9540 | | | P |
| 7439-96-5 | Manganese | J 852 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1280 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 4120 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN 3/90

VALIDATED

RPD-GWMW40-01 F

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137808

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-008

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 274 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 31.5 | B | | P |
| 7440-41-7 | Beryllium | US 0.24 | B | E N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 31000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 25.0 | | | P |
| 7439-89-6 | Iron | UJ 1480 | | E* | P |
| 7439-92-1 | Lead | U 4.1 | | | F |
| 7439-95-4 | Magnesium | 9940 | | | P |
| 7439-96-5 | Manganese | J 877 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1410 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 3270 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | U 75.5 | | | P |
| | Cyanide | | | | |

changed by SAM

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW47-01

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137803

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-003

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 Total

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 383 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | EN | F |
| 7440-43-9 | Cadmium | 0.20 | B | E | F |
| 7440-70-2 | Calcium | 8530 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 15.0 | B | | P |
| 7439-89-6 | Iron | UJ 254 | | E* | P |
| 7439-92-1 | Lead | 23.0 | | S | F |
| 7439-95-4 | Magnesium | 2630 | B | | P |
| 7439-96-5 | Manganese | J 27.0 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1090 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 3020 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

VALIDATED

3/90

APD-GWMW47-01F

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137809

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-009

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 102 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | ~~E~~ N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 8760 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 15.5 | B | | P |
| 7439-89-6 | Iron | UJ 162 | | E* | P |
| 7439-92-1 | Lead | 20.0 | | | F |
| 7439-95-4 | Magnesium | 2650 | B | | P |
| 7439-96-5 | Manganese | J 19.0 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1100 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 3290 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |
| | | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW 7-91

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137804

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-004

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 476 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | EN | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 8890 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 14.5 | B | | P |
| 7439-89-6 | Iron | UJ 346 | | E* | P |
| 7439-92-1 | Lead | 23.0 | | | F |
| 7439-95-4 | Magnesium | 2740 | B | | P |
| 7439-96-5 | Manganese | J 26.5 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1170 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | W | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 4100 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

VALIDATED

3/90

APD-GWMW 47-91 F

8-7-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137810

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-010

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 141 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | EN | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 8550 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 13.0 | B | | P |
| 7439-89-6 | Iron | UJ 88.5 | B | E* | P |
| 7439-92-1 | Lead | 31.2 | | | F |
| 7439-95-4 | Magnesium | 2750 | B | | P |
| 7439-96-5 | Manganese | J 22.0 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1220 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | S | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 3710 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW71-01

8-7-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137805

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-005

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 89.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 19.0 | B | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | E N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 44000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 10.5 | B | | P |
| 7439-89-6 | Iron | UJ 1670 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 13300 | | | P |
| 7439-96-5 | Manganese | J 414 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 331 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 3480 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |
| | | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

VALIDATED

3/90

APD-GWMW41-01F

8-7-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

137811

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-011

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 96.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 18.5 | B | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | EN | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 43300 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 10.5 | B | | P |
| 7439-89-6 | Iron | UJ 1680 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 13500 | | | P |
| 7439-96-5 | Manganese | J 395 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 308 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 4010 | B | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW42-01

8-7-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

137806

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-006

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 808 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 2.1 | B | | F |
| 7440-39-3 | Barium | 90.0 | B | | P |
| 7440-41-7 | Beryllium | UJ 0.20 | U | EN | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 139000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 16.5 | B | | P |
| 7439-89-6 | Iron | UJ 3340 | | E* | P |
| 7439-92-1 | Lead | U 5.7 | | S | F |
| 7439-95-4 | Magnesium | 49800 | | | P |
| 7439-96-5 | Manganese | J 928 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1700 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 12700 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |
| | | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWM942-01F

8-7-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137812

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1378-012

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | u 144 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.5 | B | | F |
| 7440-39-3 | Barium | 85.0 | B | | P |
| 7440-41-7 | Beryllium | us 0.20 | U | E N | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 136000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | u 13.0 | B | | P |
| 7439-89-6 | Iron | us 1950 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 49300 | | | P |
| 7439-96-5 | Manganese | J 932 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | 20.0 | U | | P |
| 7440-09-7 | Potassium | 1450 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 12400 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW49-01

8-6-96

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137901

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-001

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 110 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 24.5 | | | F |
| 7440-39-3 | Barium | 96.5 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 81200 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 11.0 | B | | P |
| 7439-89-6 | Iron | J 20100 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 10700 | | | P |
| 7439-96-5 | Manganese | J 1950 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 3760 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 21300 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

PPD-GWM-349-01 F

8-6-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137908

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-008

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 99.0 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | Z | F |
| 7440-38-2 | Arsenic | 25.5 | | | F |
| 7440-39-3 | Barium | 95.5 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | Z | F |
| 7440-43-9 | Cadmium | 0.20 | U | Z | F |
| 7440-70-2 | Calcium | 84100 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 11.5 | B | | P |
| 7439-89-6 | Iron | J 18600 | | E* | P |
| 7439-92-1 | Lead | U 4.5 | | S | F |
| 7439-95-4 | Magnesium | 10900 | | | P |
| 7439-96-5 | Manganese | J 1860 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 3690 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 22700 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by [illegible]

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWM N49-91

8-6-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137902

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-002

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 61.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | Z | F |
| 7440-38-2 | Arsenic | 25.0 | | | F |
| 7440-39-3 | Barium | 100 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | Z | F |
| 7440-43-9 | Cadmium | 0.20 | U | Z | F |
| 7440-70-2 | Calcium | 80900 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 13.5 | B | | P |
| 7439-89-6 | Iron | J 20100 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 10500 | | | P |
| 7439-96-5 | Manganese | J 2000 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 21.0 | B | * | P |
| 7440-09-7 | Potassium | 3640 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 20600 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW49-91F

8-6-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137909

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-009

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 89.0 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 22.3 | | | F |
| 7440-39-3 | Barium | 98.5 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 83500 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 12.0 | B | | P |
| 7439-89-6 | Iron | J 18800 | | E* | P |
| 7439-92-1 | Lead | U 4.6 | | S | F |
| 7439-95-4 | Magnesium | 10700 | | | P |
| 7439-96-5 | Manganese | J 1960 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 3530 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 20300 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWMW37-01

8-7-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

137903

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-003

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 1410 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 23.5 | B | | P |
| 7440-41-7 | Beryllium | 0.26 | B | E | F |
| 7440-43-9 | Cadmium | 0.47 | B | E | F |
| 7440-70-2 | Calcium | 34300 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 20.5 | B | | P |
| 7439-89-6 | Iron | UJ 1240 | | E* | P |
| 7439-92-1 | Lead | U 8.6 | | S | F |
| 7439-95-4 | Magnesium | 9160 | | | P |
| 7439-96-5 | Manganese | J 273 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 1500 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 5460 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |
| | | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW37-01F

8-6-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137910

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-010

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 144 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 20.0 | B | | P |
| 7440-41-7 | Beryllium | 0.32 | B | E | F |
| 7440-43-9 | Cadmium | 0.24 | B | E | F |
| 7440-70-2 | Calcium | 34000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 16.0 | B | | P |
| 7439-89-6 | Iron | UJ 228 | | E* | P |
| 7439-92-1 | Lead | U 8.8 | | S | F |
| 7439-95-4 | Magnesium | 8500 | | | P |
| 7439-96-5 | Manganese | J 256 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 1230 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 6310 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | U 13.5 | B | | P |
| | Cyanide | | | | |

Changed by JAK

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWMW48-01

8-6-96

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137904

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-004

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 254 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 11.3 | | | F |
| 7440-39-3 | Barium | 160 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 142000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 13.5 | B | | P |
| 7439-89-6 | Iron | J 30800 | | E* | P |
| 7439-92-1 | Lead | U 3.4 | | S | F |
| 7439-95-4 | Magnesium | 20100 | | | P |
| 7439-96-5 | Manganese | J 688 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 7560 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | S | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 52100 | | | P |
| 7440-28-0 | Thallium | 1.1 | B | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by IAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts: ART

Comments:



VALIDATED

APD-GWMN48-01F

8-6-96

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137911

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-011

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 99.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | ~~E~~ | F |
| 7440-38-2 | Arsenic | 14.2 | | S | F |
| 7440-39-3 | Barium | 152 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | ~~E~~ | F |
| 7440-43-9 | Cadmium | 0.20 | U | ~~E~~ | F |
| 7440-70-2 | Calcium | 138000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 11.5 | B | | P |
| 7439-89-6 | Iron | J 30300 | | ~~E~~* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 19300 | | | P |
| 7439-96-5 | Manganese | J 566 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 32.0 | B | * | P |
| 7440-09-7 | Potassium | 7390 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 51000 | | | P |
| 7440-28-0 | Thallium | 1.2 | B | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | U 11.0 | B | | P |
| | Cyanide | | | | |

Changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWMW39-01

8-6-96

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137905

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-005

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 273 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.8 | B | | F |
| 7440-39-3 | Barium | 81.0 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 125000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 15.5 | B | | P |
| 7439-89-6 | Iron | J 9710 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 22300 | | | P |
| 7439-96-5 | Manganese | J 1060 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | J 712 | | * | P |
| 7440-09-7 | Potassium | 5180 | | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 117000 | | | P |
| 7440-28-0 | Thallium | 1.0 | B | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW39-01F

8-6-96

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137912

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-012

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 59.0 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.6 | B | | F |
| 7440-39-3 | Barium | 73.0 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 120000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 23.0 | B | | P |
| 7439-89-6 | Iron | J 7690 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 21400 | | | P |
| 7439-96-5 | Manganese | J 802 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 5160 | | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 116000 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

Changes by IAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWFB01-01

8-6-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137906

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-006

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 76.0 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | 0.20 | U | | F |
| 7440-43-9 | Cadmium | 0.20 | U | | F |
| 7440-70-2 | Calcium | 1000 | U | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 13.5 | B | | P |
| 7439-89-6 | Iron | UJ 37.5 | B | E* | P |
| 7439-92-1 | Lead | UJ 3.1 | | | F |
| 7439-95-4 | Magnesium | 1000 | U | | P |
| 7439-96-5 | Manganese | UJ 10.0 | U | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 100 | U | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 2000 | U | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWFB-01 F

8-6-96

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137913

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-013

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 60.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 1000 | U | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 18.5 | B | | P |
| 7439-89-6 | Iron | UJ 30.0 | B | E* | P |
| 7439-92-1 | Lead | 3.0 | | | F |
| 7439-95-4 | Magnesium | 1000 | U | | P |
| 7439-96-5 | Manganese | UJ 10.0 | U | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 104 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 2000 | U | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | U 10.0 | B | | P |
| | Cyanide | | | | |

changes by SAC

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWMW46-01

8-5-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137907

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-007

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 821 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 3.7 | B | | F |
| 7440-39-3 | Barium | 132 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 115000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 13.0 | B | | P |
| 7439-89-6 | Iron | J 21700 | | E* | P |
| 7439-92-1 | Lead | U 5.0 | | S | F |
| 7439-95-4 | Magnesium | 30500 | | | P |
| 7439-96-5 | Manganese | J 1510 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 1450 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 62200 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAK

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts: ART

Comments:



VALIDATED

APD-GWMW46-01F

8-5-96

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137914

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-014

Level (low/med): LOW Date Received: 08/08/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 121 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 4.1 | B | S | F |
| 7440-39-3 | Barium | 131 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 115000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 34.5 | | | P |
| 7439-89-6 | Iron | J 21900 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | S | F |
| 7439-95-4 | Magnesium | 30200 | | | P |
| 7439-96-5 | Manganese | J 1510 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 1180 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | S | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 60900 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW43-01

8-8-96

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

137915

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-015

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 2920 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 17.6 | | S | F |
| 7440-39-3 | Barium | 63.0 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 115000 | | | P |
| 7440-47-3 | Chromium | 36.0 | | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 38.5 | | | P |
| 7439-89-6 | Iron | J 13900 | | E* | P |
| 7439-92-1 | Lead | U 7.5 | | S | F |
| 7439-95-4 | Magnesium | 48100 | | | P |
| 7439-96-5 | Manganese | J 374 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 26.5 | B | * | P |
| 7440-09-7 | Potassium | 1800 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | S | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 10100 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | U 29.0 | | | P |
| | Cyanide | | | | |

Danger by AH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts: ART

Comments:



VALIDATED

APD-GWMW43-01F
8-8-96

U.S. EPA - CLP

EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

137919

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-019

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0

DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 82.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | ~~E~~ | F |
| 7440-38-2 | Arsenic | 12.3 | | S | F |
| 7440-39-3 | Barium | 49.0 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | ~~E~~ | F |
| 7440-43-9 | Cadmium | 0.20 | U | ~~E~~ | F |
| 7440-70-2 | Calcium | 108000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 14.0 | B | | P |
| 7439-89-6 | Iron | J 7280 | | ~~E~~* | P |
| 7439-92-1 | Lead | 1.5 | U | S | F |
| 7439-95-4 | Magnesium | 45000 | | | P |
| 7439-96-5 | Manganese | J 262 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 491 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | S | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 9240 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW44-01

8-8-96

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137916

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-016

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 175 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 6.0 | B | S | F |
| 7440-39-3 | Barium | 106 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 90500 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 15.5 | B | | P |
| 7439-89-6 | Iron | UJ 1480 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 37200 | | | P |
| 7439-96-5 | Manganese | J 38.5 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 23.0 | B | * | P |
| 7440-09-7 | Potassium | 990 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 19700 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAK

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW44-01F

8-8-96

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137920

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-020

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 79.0 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 6.6 | B | S | F |
| 7440-39-3 | Barium | 164 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 98000 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | 10.0 | U | | P |
| 7439-89-6 | Iron | UJ 2050 | | E* | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 60700 | | | P |
| 7439-96-5 | Manganese | UJ 45.5 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 982 | B | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 33100 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

APD-GWMW45-01

8-8-96

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137917

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-017

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 776 | | | P |
| 7440-36-0 | Antimony | 2.0 | U | ~~E~~ | F |
| 7440-38-2 | Arsenic | 21.5 | | | F |
| 7440-39-3 | Barium | 84.5 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | ~~E~~ | F |
| 7440-43-9 | Cadmium | 0.20 | U | ~~E~~ | F |
| 7440-70-2 | Calcium | 97100 | | | P |
| 7440-47-3 | Chromium | 29.0 | | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 21.0 | B | | P |
| 7439-89-6 | Iron | J 9570 | | E* | P |
| 7439-92-1 | Lead | 38.5 | | S | F |
| 7439-95-4 | Magnesium | 27500 | | | P |
| 7439-96-5 | Manganese | J 641 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 35.0 | B | * | P |
| 7440-09-7 | Potassium | 5350 | | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 70900 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | U 15.0 | B | | P |
| | Cyanide | | | | |

Changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

APD-GWMW45-01F

8-8-96

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137921

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-021

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 97.5 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 25.9 | | S | F |
| 7440-39-3 | Barium | 82.5 | B | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 93200 | | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 19.0 | B | | P |
| 7439-89-6 | Iron | J 8050 | | E* | P |
| 7439-92-1 | Lead | U 3.5 | | W | F |
| 7439-95-4 | Magnesium | 24700 | | | P |
| 7439-96-5 | Manganese | J 612 | | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 5070 | | | A |
| 7782-49-2 | Selenium | 2.0 | U | S | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 68100 | | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changes by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137918

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-018

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 TOTAL

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | U 57.0 | B | | P |
| 7440-36-0 | Antimony | 2.0 | U | E | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | 0.20 | U | E | F |
| 7440-43-9 | Cadmium | 0.20 | U | E | F |
| 7440-70-2 | Calcium | 1000 | U | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | U 10.5 | B | | P |
| 7439-89-6 | Iron | UJ 23.0 | B | E* | P |
| 7439-92-1 | Lead | 2.9 | B | | F |
| 7439-95-4 | Magnesium | 1000 | U | | P |
| 7439-96-5 | Manganese | UJ 10.0 | U | E* | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 100 | U | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 2000 | U | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

137922

Lab Name: MWL Contract: 4077.0073

Lab Code: Case No.: SAS No.: SDG No.: SD1378

Matrix (soil/water): WATER Lab Sample ID: 1379-022

Level (low/med): LOW Date Received: 08/09/96

% Solids: 0.0 DISSOLVED

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 50.0 | U | | P |
| 7440-36-0 | Antimony | 2.0 | U | | F |
| 7440-38-2 | Arsenic | 1.0 | U | | F |
| 7440-39-3 | Barium | 10.0 | U | | P |
| 7440-41-7 | Beryllium | 0.20 | U | | F |
| 7440-43-9 | Cadmium | 0.20 | U | | F |
| 7440-70-2 | Calcium | 1000 | U | | P |
| 7440-47-3 | Chromium | 10.0 | U | | P |
| 7440-48-4 | Cobalt | 10.0 | U | | P |
| 7440-50-8 | Copper | 10.0 | U | | P |
| 7439-89-6 | Iron | UJ 20.0 | U | * | P |
| 7439-92-1 | Lead | 1.5 | U | | F |
| 7439-95-4 | Magnesium | 1000 | U | | P |
| 7439-96-5 | Manganese | UJ 10.0 | U | * E | P |
| 7439-97-6 | Mercury | 0.20 | U | | CV |
| 7440-02-0 | Nickel | UJ 20.0 | U | * | P |
| 7440-09-7 | Potassium | 100 | U | | A |
| 7782-49-2 | Selenium | 2.0 | U | | F |
| 7440-22-4 | Silver | 10.0 | U | | P |
| 7440-23-5 | Sodium | 2000 | U | | P |
| 7440-28-0 | Thallium | 1.0 | U | | F |
| 7440-62-2 | Vanadium | 20.0 | U | | P |
| 7440-66-6 | Zinc | 10.0 | U | | P |
| | Cyanide | | | | |

changed by JAH
JAH

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:



VALIDATED