INTERIMEREMENTAL MESASURE PROGRAM

STEMICARRIUAU PROCERESS REPORT Aurile 2001 - September 2001

FORMER GRIFFIN TECHNOLOGY FACH FRY
TOWN OF FARMINGTON
ONTARIO COUNTY, NEW YORK
INDEX NO. (B8-315-90-61)

Prepared for Diebold, Inc. Canton, Ohio

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URS Comporation

800 West St. Clair Avenue Sulta 500 Claveland, Chio 44118-1232 216-622-2400 Project No. 38-05/206191.03

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INTERIM REMEDIAL MEASURE SEMI-ANNUAL PROGRESS REPORT

APRIL 2001 - SEPTEMBER 2001

GRIFFIN TECHNOLOGY, INC. FACILITY TOWN OF FARMINGTON

ONTARIO COUNTY, NEW YORK

The enclosed Semi-Annual Progress Report has been reviewed by the undersigned and has been found to be consistent with the requirements of the Order on Consent (Index No. B8-315-90-01), entered into by the New York State Department of Environmental Conservation and Griffin Technology, Inc.

Name:

Martin S. Leonard, P.E.

Title:

Consulting Professional Engineer

Date:

November 1, 2001



This report presents information collected by URS Corporation (URS) between April and September 2001 during the operation of the Interim Remedial Measure (IRM) system at the Griffin Technology, Inc. (GTI) site located at 6132 Victor-Manchester Road in the Farmington, Ontario County, New York. A general location map is included as Figure 1-1.

The IRM system consists of four wells equipped with groundwater extraction pumps, which have been plumbed to discharge groundwater into the local sanitary sewer system. The IRM system was proposed in the *IRM Work Plan* submitted to the New York State Department of Environmental Conservation (NYSDEC) on July 10, 1996. The Work Plan was prepared in accordance with the Order on Consent agreement (Index No. B8-315-90-01) entered into by GTI and the NYSDEC. Information supporting the selected IRM, such as the Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP), was included in the Work Plan.

On September 27, 1996, GTI submitted an *Interim Remedial Measure Program*, Final Design Document to the NYSDEC. This document contained the proposed layout and detail drawings for the IRM system and a copy of the letter approving the discharge of recovered groundwater into the local publicly owned treatment works (POTW) sanitary sewer. In addition, an implementation schedule to construct the system and a proposed two year sample collection and reporting schedule were included in the design document.

During December 1996 and January 1997, the IRM components were installed at the site. The components included three recovery wells and one deep monitoring well with the potential to be converted to a recovery well in the future. Following approval by the NYSDEC and the Canandaigua-Farmington Water and Sewer District to discharge recovery water into the sanitary sewer system, the system was placed on line with three recovery wells. The IRM system began operating on February 18, 1997. Between April and June 1999, one deep monitoring well (MW-2D) was converted to a recovery well (RW-4) and brought on line.

In April 1999, a subsurface soil investigation was conducted at the GTI site to evaluate current soil conditions west of the manufacturing building. The scope of work and results are detailed in the *Soil Investigation Report*, dated June 25, 1999.

Between December 1999 and March 2000, a new sanitary sewer main crossing was installed beneath Victor-Manchester Road to provide separate sanitary sewer service to the undeveloped western parcel of the former GTI site on which the recovery system is located. On April 7, 2000, the recovery system discharge was disconnected from the sanitary sewer on the central parcel of the GTI site and connected to the new sanitary sewer main crossing at the clean-out on the western parcel.

The activities performed during this six-month period of operation are described in Section 2.0. Information collected during this period of operation is presented in Section 3.0. Conclusions and recommendations are presented in Section 4.0.

The Scope of Work for the IRM was presented in the Final Design Document presented to the NYSDEC on September 27, 1996. Implementation of the IRM consisted of the following elements:

- Installing an IRM system in the undeveloped parcel of land located downgradient of the source area. The IRM system consisted of installing three groundwater extraction wells, one bedrock monitoring well located in the source area which could potentially be used for additional recovery, two sets of nested piezometers located between each of the three extraction wells to monitor groundwater elevations between each well, a groundwater recovery and collection system to convey water to a central access vault, electrical power supply and controllers for each recovery pump, sample collection and flow monitoring appurtenances, and a force main sewer to discharge effluent from the access vault to a sanitary sewer located on the southeast portion of the site.
- Converting the deep bedrock monitoring well into a fourth recovery well.
- Installing a new sewer main crossing to provide sanitary sewer service to the undeveloped western parcel.
- Monitoring the quantity and quality of groundwater recovered from the system monthly and reporting this data to the local POTW.
- Monitoring the groundwater elevations in all on-site wells and piezometers to evaluate the
 effectiveness of the IRM as a groundwater extraction system and hydraulic barrier.
- Collecting groundwater samples from all wells located on and off site semi-annually beginning six months after initiation of the system. All groundwater samples collected during these semi-annual activities will be analyzed for volatile organic compounds (VOCs) by NYSDEC Test Method ASP 91-1 (now referenced as NYSDEC Test Method ASP 95-1).
- Preparing progress reports for submission to the NYSDEC. The reports should include data collected during the proceeding months of operation as well as information and activities to be performed during subsequent reporting periods.

2.1 IRM SYSTEM

The IRM installation activities were performed during December 1996 and January 1997. Operation of the IRM system was initiated on February 18, 1997. In June 1999, an additional recovery well was added to the system. In April 2000, a new sanitary sewer tie-in was connected to the system.

The layout of the IRM system, on-site groundwater monitoring wells and piezometers, and other pertinent features discussed in this report are shown in Figure 2-1. The system is currently in operation. The components comprising the IRM system are discussed in greater detail below.

SECTIONTWO

2.1.1 IRM System Configuration

The IRM system originally consisted of a network of three groundwater recovery wells (designated as RW-01, RW-02 and RW-03). Between April and June 1999, one deep monitoring well (MW-2D) was converted to a recovery well (RW-4) and brought on line.

The four recovery wells are constructed with 20-foot screened intervals that straddle the contact between the overburden and the bedrock. The well depths range between approximately 27 and 33 feet below ground surface (bgs).

A Goulds Model 10GS electric, submersible pump was installed in each recovery well. Each pump is connected to a PumpTec[®] "Load-Sensor" type controller to automate the operation of the pump. The controllers are currently operating on 4-minute reset time intervals.

Underground piping and wiring connect the recovery wells to a Central Access Vault, located on the western side of the facility building. At the Central Access Vault, the individual groundwater conveyance pipe from each recovery well is connected to a manifold, which connects to a common header discharge pipe. Each individual conveyance pipe on the manifold is equipped with a shut-off valve, sample port, and totalizing flow meter to facilitate individual well monitoring. In addition, a shut-off valve, sample port, and totalizing flow meter are located on the common header pipe prior to discharge.

The extracted groundwater flows from the manifold and header in the Central Access Vault through a force main pipe and into a sanitary sewer where it travels by gravity to the Canandaigua-Farmington Water and Sewer District for ultimate disposal. Prior to system start-up, it was necessary for the Canandaigua-Farmington Water and Sewer District to receive permission from the NYSDEC to receive this wastewater.

Between December 1999 and March 2000, a new sanitary sewer main crossing was installed beneath Victor-Manchester Road to provide separate service to the IRM system. On April 7, 2000, the recovery system discharge was disconnected from the sanitary sewer on the central parcel of the GTI site (where the former GTI building is located). The recovery system discharge was then connected to the new sanitary sewer main crossing at the clean-out on the western parcel.

2.2 IRM SYSTEM MONITORING

During this six-month period of operation, groundwater elevation, discharge volume, and groundwater analytical data were collected to monitor the effectiveness of the IRM system. The data collected are discussed in the following subsections.

2.2.1 Hydraulic Head Measurement

Hydraulic head (groundwater elevation) measurements were collected from each groundwater well and piezometer located on site a minimum of once per month during routine site visits. During some visits, hydraulic head measurements were also collected from nearby monitoring wells MW-6S and MW-6D. On September 13, 2001, prior to the collection of groundwater samples, the water level in each on-site and off-site groundwater monitoring well was measured

SECTIONTWO Scope of Work

and recorded to evaluate groundwater flow conditions. All groundwater measurements were collected using an electronic water level indicator capable of measuring the water elevation to the nearest 0.01 ft.

2.2.2 Groundwater Sampling and Analysis

During this six-month period of operation, composite effluent samples were collected monthly from the common header discharge in the Central Access Vault. These samples were submitted to Columbia Analytical Services, Inc. (CASI) of Rochester, New York for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) method 8260. The analytical results of these composite samples were used to report estimated loadings to the POTW. Due to the low discharge during September 2001, a sample of the effluent was not collected for laboratory analysis.

On September 13, 2001, groundwater samples were collected to evaluate regional groundwater quality. Prior to sample collection, the static water level in each well was measured (Section 2.2.1). Using the static water level measurements, the volume of water contained in each well (the well volume) was calculated. The monitoring well was then purged of a minimum of three well volumes of water or until dry using a new, disposable, high density polyethylene (HDPE) bailer equipped with a nylon cord. Groundwater samples were collected within 24 hours of purging from each groundwater monitoring well and recovery well. Samples were collected in laboratory supplied containers.

In addition, groundwater samples were collected from recovery wells RW-1 and RW-3. These samples were collected in laboratory supplied containers directly from sample ports on the pump discharge line. Samples were not collected from recovery wells RW-2 and RW-4 due to low discharge.

Groundwater samples were placed into a cooler with ice for preservation until delivered to the laboratory for analysis. One duplicate sample was collected from monitoring well MW-5D. Groundwater samples were submitted to CASI and analyzed for VOCs by NYSDEC Test Method ASP 95-1. Chain-of-custody procedures were observed throughout the sampling event.

The data collected during this six-month period of IRM system operation and the results of the September 2001 semi-annual groundwater sampling event are presented in the following subsections.

3.1 HYDRAULIC HEAD MEASUREMENT RESULTS

Hydraulic head measurements collected during this operating period from on-site and off-site groundwater monitoring wells and piezometers are presented in Table 3-1.

The elevation data were used to construct monthly groundwater contour maps of the site for the overburden water-bearing zone (Figures 3-1 through 3-6) and the bedrock water-bearing zone (Figures 3-7 through 3-12). Figure 3-6 is a contour map illustrating groundwater flow conditions in the vicinity of the site in the overburden water-bearing zone on September 13, 2001. Figure 3-13 is a contour map illustrating groundwater flow conditions in the vicinity of the site in the bedrock water-bearing zone on September 13, 2001.

The groundwater contour maps from the GTI site indicate that groundwater in the overburden water-bearing zone typically flows to the southwest. In the bedrock water-bearing zone, groundwater typically flows toward a groundwater low area near the southwest corner of the site, in the vicinity of RW-3.

The groundwater elevation data indicate that the IRM system is continuing to influence groundwater flow patterns at the GTI site. These results are consistent with previous observed site conditions.

3.2 EFFLUENT OPERATING DATA AND ANALYTICAL RESULTS

A summary of the IRM system operating data and effluent analysis collected from January – September 2001 is presented in Table 3-2. Due to low monthly discharge, a September composite effluent sample was not collected from the system. Grab samples were collected from two of the four recovery wells, RW-1 and RW-3. The highest resultant concentrations from recovery well RW-1 are shown on Table 3-2 and were used to report estimated loadings to the POTW.

A summary of the operating data and effluent analysis collected during each month of IRM system operation is presented in Table 3-2. The results continue to indicate that groundwater containing chemicals of concern (COCs) is being removed from underneath the GTI site. The COCs detected in the effluent samples consisted of trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA). These COCs are consistent with earlier results. TCE was consistently the compound with the highest reported concentration.

The concentrations of COCs in the system effluent, mainly TCE, fluctuated during this operating period. The concentrations remained within the range of historical levels during the entire operating period.

The quantity of water removed by the system decreased during the latter months (July through September 2001) of this operating period. This appears to be related to lower seasonal groundwater elevations during later summer and fall and is similar to conditions observed during

previous years. Laboratory data sheets for effluent samples collected during this period of operation are provided in Appendix A.

3.3 GROUNDWATER ANALYTICAL RESULTS

A summary of groundwater analytical data from wells sampled on September 13, 2001 is presented in Table 3-3. Table 3-3 also summarizes the data from previous sampling events. The laboratory data sheets from CASI for this semi-annual groundwater sampling event are provided in Appendix B. A data validation report for this data, prepared by a QA/QC reviewer, is provided in Appendix C. Results of the validation indicate that the data are acceptable.

Groundwater analytical results obtained from the September 13, 2001 event showed that concentrations of COCs were generally slightly higher than those reported for the previous (March 8, 2001) groundwater sampling event. The COCs detected in groundwater samples collected during September 2001 consisted of TCE, 1,1,1-TCA, and cis-1,2-dichloroethene (cis-1,2-DCE). These COCs are generally consistent with the results of earlier sampling events. Vinyl chloride (VC), detected at a concentration of 3 micrograms per liter (µg/l) in the sample collected from monitoring well MW-07D during the previous event, was not detected during the September 2001 event. TCE was consistently the compound with the highest reported concentration.

Based on the information collected during this six-month period of IRM system operation, the following summary has been developed regarding environmental conditions at the GTI site:

- Groundwater flow in the overburden and bedrock zones at the site is primarily to the southwest corner of the site. This is consistent with previous reports for the GTI site.
- The IRM system is influencing groundwater flow patterns in the vicinity of the GTI facility. The groundwater elevation data generally indicate the presence of a groundwater low in the bedrock water-bearing zone in the southwest portion of the site, in the immediate vicinity of the IRM system. The September 13, 2001 bedrock groundwater elevation data indicate the presence of a groundwater low southwest of the site in the vicinity of monitoring well MW-07S, which has been observed previously.
- Groundwater elevations were at high levels at the beginning of the operating period and decreased steadily throughout the six-month operating period.
- The monthly quantity of groundwater removed by the IRM system decreased over the sixmonth operating period. The quantity of groundwater discharged by the system appears to correlate with seasonal changes in groundwater elevations, with lower discharge and groundwater elevations in late summer, fall, and early winter and higher discharge and groundwater elevations in late winter, spring, and early summer.
- The concentrations of COCs in the IRM system effluent fluctuated throughout the operating period; concentrations remained within historical levels. TCE was consistently the COC reported at the highest concentration in the IRM system effluent.
- The COC concentrations in the IRM system effluent and groundwater monitoring well samples appear to be higher during periods of lower groundwater elevations and lower during periods of higher groundwater elevations.

Data collection activities at the site will be continued in the same manner. Continued monitoring of the site will provide additional data to evaluate the long-term effectiveness of the IRM system.

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-01	641.79	04/11/01	3.46	638.33
		04/29/01	5.32	636.47
		05/14/01	7.40	634.39
		05/30/01	8.08	633.71
		06/16/01	11.04	630.75
		06/29/01	12.48	629.31
		07/16/01	13.92	627.87
		07/25/01	14.68	627.11
		08/15/01	16.12	625.67
		08/31/01	16.13	625.66
		09/13/01	15.40	626.39
		09/29/01	12.79	629.00
MW-02S	641.28	04/11/01	5.63	635.65
		04/29/01	8.47	632.81
		05/14/01	13.22	628.06
		05/30/01	13.73	627.55
		06/16/01	DRY	DRY
		06/29/01	DRY	DRY
		07/16/01	DRY	DRY
		07/25/01	DRY	DRY
		08/15/01	DRY	DRY
		08/31/01	DRY	DRY
		09/13/01	DRY	DRY
		09/29/01	DRY	DRY
MW-2D	642.37	Monitoring w	vell converted to recov	very well RW-4.

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-03	642.17	04/11/01	5.51	636.66
		04/29/01	9.93	632.24
		05/14/01	13.50	628.67
		05/30/01	14.12	628.05
		06/16/01	15.87	626.30
		06/29/01	16.88	625.29
		07/16/01	17.72	624.45
		07/25/01	18.50	623.67
		08/15/01	19.72	622.45
		08/31/01	19.59	622.58
		09/13/01	19.26	622.91
		09/29/01	16.68	625.49
MW-04	641.75	04/11/01	6.98	634.77
		04/29/01	11.78	629.97
		05/14/01	16.25	625.50
		05/30/01	16.33	625.42
		06/16/01	18.50	623.25
		06/29/01	19.22	622.53
		07/16/01	18.73	623.02
		07/25/01	19.61	622.14
		08/15/01	19.63	622.12
		08/31/01	19.51	622.24
		09/13/01	19.59	622.16
		09/29/01	16.77	624.98

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-05S	640.85	04/11/01	8.10	632.75
		04/29/01	12.76	628.09
		05/14/01	16.22	624.63
		05/30/01	17.17	623.68
		06/16/01	18.73	622.12
		06/29/01	19.37	621.48
		07/16/01	19.84	621.01
		07/25/01	20.42	620.43
		08/15/01	DRY	DRY
		08/31/01	DRY	DRY
		09/13/01	DRY	DRY
		09/29/01	19.65	621.20
AW OFF	(41.0)	04/11/01	10.05	500.04
MW-05D	641.01	04/11/01	10.97	630.04
		04/29/01	17.11	623.90
		05/14/01	18.48	622.53
		05/30/01	19.34	621.67
		06/16/01	19.91	621.10
		06/29/01	21.14	619.87
		07/16/01	21.46	619.55
		07/25/01	22.05	618.96
		08/15/01	22.62	618.39
		08/31/01	22.80	618.21
		09/13/01	22.99	618.02
		09/29/01	21.60	619.41

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-06S	636.61	04/11/01	3.49	633.12
		04/29/01	NM	NM
		05/14/01	11.95	624.66
		05/30/01	NM	NM
		06/16/01	13.80	622.81
		06/29/01	NM	NM
		07/16/01	15.12	621.49
		07/25/01	NM	NM
		08/15/01	16.29	620.32
		08/31/01	NM	NM
		09/13/01	16.52	620.09
		09/29/01	NM	NM
MW-06D	636.83	04/11/01	3.74	633.09
		04/29/01	NM	NM
		05/14/01	12.19	624.64
		05/30/01	NM	NM
		06/16/01	14.01	622.82
		06/29/01	NM	NM
		07/16/01	15.39	621.44
		07/25/01	NM	NM
		08/15/01	16.55	620,28
		08/31/01	NM	NM
		09/13/01	16.76	620.07
		09/29/01	NM	NM

TABLE 3-1 SUMMARY OF GROUNDWATER ELEVATIONS APRIL - SEPTEMBER 2001 GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-07S	634.29	04/11/01	NM	NM
		04/29/01	NM	NM
		05/14/01	NM	NM
		05/30/01	NM	NM
		06/16/01	NM	NM
		06/29/01	NM	NM
		07/16/01	NM	NM
		07/25/01	NM	NM
		08/15/01	NM	NM
		08/31/01	NM	NM
		09/13/01	16.67	617.62
		09/29/01	NM	NM
MW 07D	624 16	04/11/01	MM	NIM
MW-07D	634.16	04/11/01	NM	NM
MW-07D	634.16	04/29/01	NM	NM
MW-07D	634.16	04/29/01 05/14/01	NM NM	NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01	NM NM NM	NM NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01 06/16/01	NM NM NM NM	NM NM NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01 06/16/01 06/29/01	NM NM NM NM	NM NM NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01 06/16/01 06/29/01 07/16/01	NM NM NM NM NM	NM NM NM NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01 06/16/01 06/29/01 07/16/01 07/25/01	NM NM NM NM NM NM	NM NM NM NM NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01 06/16/01 06/29/01 07/16/01 07/25/01 08/15/01	NM NM NM NM NM NM NM	NM NM NM NM NM NM
MW-07D	634.16	04/29/01 05/14/01 05/30/01 06/16/01 06/29/01 07/16/01 07/25/01	NM NM NM NM NM NM	NM NM NM NM NM NM

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-09S	630.16	04/11/01	NM	NM
		04/29/01	NM	NM
		05/14/01	NM	NM
		05/30/01	NM	NM
		06/16/01	NM	NM
		06/29/01	NM	NM
		07/16/01	NM	NM
		07/25/01	NM	NM
		08/15/01	NM	NM
		08/31/01	NM	NM
		09/13/01	15.81	614.35
		09/29/01	NM	NM
MW-09D	630.29	04/11/01	NM	NM
		04/29/01	NM	NM
		05/14/01	NM	NM
		05/30/01	NM	NM
		06/16/01	NM	NM
		06/29/01	NM	NM
		07/16/01	NM	NM
		07/25/01	NM	NM
		08/15/01	NM	NM
		08/31/01	NM	NM
		09/13/01	35.95	594.34
		09/29/01	NM	NM

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-10S	629.00	04/11/01	NM	NM
		04/29/01	NM	NM
		05/14/01	NM	NM
		05/30/01	NM	NM
		06/16/01	NM	NM
		06/29/01	NM	NM
		07/16/01	NM	NM
		07/25/01	NM	NM
		08/15/01	NM	NM
		08/31/01	NM	NM
		09/13/01	16.66	612.34
		09/29/01	NM	NM
MW-10D	626.80	04/11/01	NM	NM
		04/29/01	NM	NM
		05/14/01	NM	NM
		05/30/01	NM	NM
		06/16/01	NM	NM
		06/29/01	NM	NM
		07/16/01	NM	NM
		07/25/01	NM	NM
		08/15/01	NM	NM
		08/31/01	NM	NM
		09/13/01	17.81	608.99
		09/29/01	NM	NM

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-11D	641.89	04/11/01	6.49	635.40
		04/29/01	11.03	630.86
		05/14/01	13.34	628.55
		05/30/01	13.40	628.49
		06/16/01	15.50	626.39
		06/29/01	16.43	625.46
		07/16/01	17.43	624.46
		07/25/01	17.83	624.06
		08/15/01	18.60	623.29
		08/31/01	18.88	623.01
		09/13/01	18.94	622.95
		09/29/01	18.93	622.96
MW-13D	636.58	04/11/01	NM	NM
WI W -13D	030.30	04/29/01	NM	NM
		05/14/01	NM	NM
		05/30/01	NM	NM
		06/16/01	NM	NM
		06/29/01	NM	NM
		07/16/01	NM ·	NM
		07/25/01	NM	NM
		08/15/01	NM	NM
		08/31/01	NM	NM
		09/13/01	18.38	618.20
		09/29/01	NM	NM

TABLE 3-1 SUMMARY OF GROUNDWATER ELEVATIONS APRIL - SEPTEMBER 2001 GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

Well	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
PZ-1S	640.50	04/11/01	5.92	634.58
		04/29/01	DRY	DRY
		05/14/01	DRY	DRY
		05/30/01	DRY	DRY
		06/16/01	DRY	DRY
		06/29/01	DRY	DRY
		07/16/01	DRY	DRY
		07/25/01	DRY	DRY
		08/15/01	DRY	DRY
		08/31/01	DRY	DRY
		09/13/01	DRY	DRY
		09/29/01	10.39	630.11
PZ-1D	640.67	04/11/01	6.10	634.57
		04/29/01	11.25	629.42
		05/14/01	DRY	DRY
		05/30/01	DRY	DRY
		06/16/01	DRY	DRY
		06/29/01	DRY	DRY
		07/16/01	DRY	DRY
		07/25/01	DRY	DRY
		08/15/01	DRY	DRY
		08/31/01	DRY	DRY
		09/13/01	DRY	DRY
		09/29/01	DRY	DRY

TABLE 3-1
SUMMARY OF GROUNDWATER ELEVATIONS
APRIL - SEPTEMBER 2001
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
PZ-2S	639.73	04/11/01	8.77	630.96
		04/29/01	12.68	627.05
		05/14/01	16.22	623.51
		05/30/01	16.55	623.18
		06/16/01	DRY	DRY
		06/29/01	DRY	DRY
		07/16/01	DRY	DRY
		07/25/01	DRY	DRY
		08/15/01	DRY	DRY
		08/31/01	DRY	DRY
		09/13/01	DRY	DRY
		09/29/01	DRY	DRY
PZ-2D	640.01	04/11/01	10.21	629.80
		04/29/01	13.75	626.26
		05/14/01	16.91	623.10
		05/30/01	17.17	622.84
		06/16/01	18.89	621.12
		06/29/01	19.60	620.41
		07/16/01	19.98	620.03
		07/25/01	20.22	619.79
		08/15/01	20.60	619.41
		08/31/01	20.15	619.86
		09/13/01	20.39	619.62
		09/29/01	19.49	620.52

NM indicates water elevation not measured.

DRY indicates well did not contain groundwater.

TABLE 3-2 SUMMARY OF EFFLUENT DISCHARGES TO POTW - 2001 GRIFFIN TECHNOLOGY FACILITY FARMINGTON, NEW YORK

	DISCHARGE						
MONTH	(GAL.)	TCE	1,1,1-TCA	cis-1,2-DCE	2-BUTANONE	VINYL CHLORIDE	ACETONE
January 2001	93,400	410	ND	ND	ND	ND	ND
February 2001	245,630	340	ND	ND	ND	ND	ND
March 2001	360,490	220	ND	ND	ND	ND	ND
April 2001	412,099	210	ND	ND	ND	ND	ND
May 2001	164,831	390	ND	ND	ND	ND	ND
June 2001	97,349	380	10	ND	ND	ND	ND
July 2001	52,690	340	ND	ND	ND	ND	ND
August 2001	48,101	360	ND	ND	ND	ND	ND
September 2001	42,290	440*	8*	9*	ND	ND	ND

- 1. All results expressed in micrograms per liter (µg/l).
- 2. No other VOC compounds detected.
- 3. ND indicates not detected.
- 4. NS indicates no sample was detected due to low discharge.

^{*} Result from September 13, 2001 grab sample of RW-1. Sample of effluent not collected due to low flow.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Monitoring Well No.	Sample Date	TCE	1,1,1-TCA	CIS- 1,2-DCE	XYLENES	1,1-DCE	ACETONE	VINYL CHLORIDI
MW-01	12/19/94	ND	ND	ND	ND	ND	ND	ND
	5/21/96	ND	ND	ND	ND	ND	ND	ND
	8/13/97	ND	ND	ND	ND	ND	ND	ND
	3/18/98	ND	ND	ND	ND	ND	ND	ND
	9/2/98	ND	ND	ND	ND	ND	ND	ND
	3/18/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	ND	ND	ND	ND	ND	ND	ND
	3/28/00	ND	ND	ND	ND	ND	ND	ND
	9/8/00	ND	ND	ND	ND	ND	ND	ND
	3/8/01	ND	ND	ND	ND	ND	ND	ND
	9/13/01	ND	ND	ND	ND	ND	ND	ND
MW-02S	12/19/94	850	ND	ND	ND	ND	ND	ND
	5/21/96	30	ND	1	ND	ND	ND	ND
	8/13/97	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/18/98	17,000	ND	ND	ND	ND	ND	ND
	9/2/98	18,000	210	ND	ND	ND	ND	ND
	3/18/99	28	ND	ND	ND	ND	ND	ND
	9/2/99	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/28/00	6	ND	ND	ND	ND	ND	ND
	9/8/00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/8/01	9	ND	ND	ND	ND	ND	ND
	9/13/01	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-02D	8/13/97	450	23	42	ND	ND	ND	ND
	3/18/98	740	16	28	ND	ND	ND	ND
	9/2/98	680	25	39	ND	ND	ND	ND
	3/18/99	190	5	6	ND	ND	ND	ND
	Monitoring v	well conver	ted to recovery	well RW-4				
MW-03	12/19/94	190	ND	ND	ND	ND	ND	ND
	5/21/96	120	ND	2	ND	ND	ND	ND
	8/13/97	150	ND	2	ND	ND	ND	ND
	3/18/98	88	ND	ND	ND	ND	ND	ND
	9/2/98	110	ND	ND	ND	ND	ND	ND
	3/18/99	45	ND	ND	ND	ND	ND	ND
	9/2/99	170	ND	ND	ND	ND	ND	ND
	3/28/00	93	ND	ND	ND	ND	ND	ND
	9/8/00	150	ND	ND	ND	ND	ND	ND
	3/8/01	96	ND	ND	ND	ND	ND	ND
	9/13/01	120	ND	ND	ND	ND	ND	ND

- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.
- Data presented includes actual and estimated concentrations based on Level IV Data Validation Procedures. Refer to analyt data and data validation report for additional descriptions.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Monitoring	Sample	TOP	11170	CIS-	WAIT PAIDS	11 000	ACETONE	VINYL
Well No.	Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES	1,1-DCE	ACETONE	
MW-04	12/19/94	710	6.7	23	ND	ND	ND	ND
	5/21/96	16	ND	2	ND	ND	ND	ND
	8/13/97	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/18/98	59	ND	2	ND	ND	ND	ND
	9/2/98	450	7	20	ND	ND	ND	ND
	3/18/99	58	ND	- 1	ND	ND	ND	ND
	9/2/99	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/28/00	9	ND	ND	ND	ND	ND	ND
Duplicate	3/28/00	9	ND	ND	ND	ND	ND	ND
- up.:-out-	9/8/00	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/8/01	130	ND	2	ND	ND	ND	ND
Duplicate	3/8/01	130	ND	2	ND	ND	ND	ND
	9/13/01	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-05S	12/19/94	580	15	ND	ND	ND	ND	ND
	5/21/96	350	16	ND	ND	ND	ND	ND
	8/13/97	760	31	4	ND	ND	ND	ND
	3/18/98	120	4	ND	1	ND	ND	ND
	9/2/98	390	14	ND	ND	ND	ND	ND
	3/18/99	95	3	ND	ND	ND	ND	ND
	9/2/99	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/28/00	140	4	ND	ND	ND	ND	ND
	9/8/00	550	22	ND	ND	ND	ND	ND
	3/8/01	330	9	ND	ND	ND	ND	ND
	9/13/01	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MW-05D	12/19/94	820	23	ND	ND	ND	ND	ND
	5/21/96	1,000	48	8	ND	ND	ND	ND
	8/13/97	250	7	2	ND	ND	ND	ND
	3/18/98	250	7	ND	ND	ND	ND	ND
	9/2/98	300	8	2	ND	ND	ND	ND
	3/18/99	200	7	2	ND	ND	ND	ND
	9/2/99	220	6	2	ND	ND	ND	ND
	3/28/00	190	4	ND	ND	ND	ND	ND
	9/8/00	160	3	ND	ND	ND	ND	ND
	3/8/01	160	3	ND	ND	ND	ND	ND
	9/13/01	120	3	ND	ND	ND	ND	ND
Duplicate	9/13/01	110	2	ND	ND	ND	3	ND

- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.
- 7. Data presented includes actual and estimated concentrations based on Level IV Data Validation Procedures. Refer to analyt data and data validation report for additional descriptions.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Monitoring	Sample	115		CIS-	1			VINYL
Well No.	Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES	1,1-DCE	ACETONE	CHLORIDI
MW-06S	12/19/94	270	7.8	ND	ND	ND	ND	ND
	5/21/96	ND	2	ND	ND	ND	ND	ND
	8/13/97	140	9	3	ND	ND	ND	ND
	3/18/98	5	ND	ND	ND	ND	ND	ND
	9/2/98	140	8	2	ND	ND	ND	ND
	3/17/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	110	6	4	ND	ND	ND	ND
	3/28/00	3	ND	ND	ND	ND	ND	ND
	9/8/00	110	5	ND	ND	ND	ND	ND
	3/8/01	ND	ND	ND	ND	ND	ND	ND
	9/13/01	72	4	4	ND	ND	ND	ND
MW-06D	12/19/94	190	7.5	ND	ND	ND	ND	ND
	5/21/96	240	10	ND	ND	ND	ND	ND
	8/13/97	150	10	2	ND	ND	ND	ND
	3/18/98	6	ND	ND	ND	ND	ND	ND
	9/2/98	140	8	2	ND	ND	ND	ND
	3/17/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	110	7	2	ND	ND	ND	ND
	3/28/00	89	5	1	ND	ND	ND	ND
	9/8/00	110	6	ND	ND	ND	ND	ND
Duplicate	9/8/00	110	6	ND	ND	ND	ND	ND
- apricaio	3/8/01	95	5	ND	ND	ND	ND	ND
	9/13/01	80	4	3	ND	ND	3	ND
MW-07S	12/19/94	250	6.6	8	ND	ND	ND	ND
	5/21/96	310	7	6	ND	ND	ND	ND
	8/13/97	250	6	6	ND	ND	ND	ND
	3/18/98	3	ND	ND	ND	ND	ND	ND
	9/2/98	220	5	4	ND	ND	ND	ND
	3/17/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	220	4	4	ND	ND	ND	ND
	3/28/00	210	4	3	ND	ND	ND	ND
	9/8/00	210	ND	ND	ND	ND	ND	ND
	3/8/01	200	4	3	ND	ND	ND	ND
	9/13/01	190	3	4	ND	ND	ND	ND
MW-07D	12/19/94	260	ND	7	ND ·	ND	ND	ND
	5/21/96	290	4	12	ND	ND	ND	ND
	8/13/97	180	2	13	ND	ND	ND	ND
	3/18/98	150	2	15	ND	ND	ND	ND
	9/2/98	200	2	15	ND	ND	ND	ND
	3/17/99	100	ND	8	ND	ND	ND	ND
	9/2/99	180	2	14	ND	ND	ND	ND
	3/28/00	130	ND	19	ND	ND	ND	4
	9/8/00	180	ND	13	ND	ND	ND	ND
	3/8/01	140	ND	20	ND	ND	ND	3
	9/13/01	150	1	14	ND	ND	ND	ND

- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.
- Data presented includes actual and estimated concentrations based on Level IV Data Validation Procedures. Refer to analyt data and data validation report for additional descriptions.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Monitoring Well No.	Sample Date	TCE	1,1,1-TCA	CIS- 1,2-DCE	XYLENES	1,1-DCE	ACETONE	VINYL CHLORIDI
MW-08S	12/19/94	29	ND	ND	ND	ND	ND	ND
	Well abandor	nea.						
MW-08D	12/19/94	55	ND	ND	ND	ND	ND	ND
	Well abandon	ned.					ND	
MW-09S	12/19/94	ND	ND	ND	ND	ND	ND	ND
	5/21/96	ND	ND	ND	ND	ND	ND	ND
	8/13/97	2	ND	ND	ND	ND	ND	ND
	3/18/98	3	ND	ND	ND	ND	ND	ND
	9/2/98	NS	NS	NS	NS	NS	NS	NS
	3/18/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	ND	ND	ND	ND	ND	ND	ND
	3/28/00	ND	ND	ND	ND	ND	ND	ND
	9/8/00	ND	ND	ND	ND	ND	ND	ND
	3/8/01	ND	ND	ND	ND	ND	ND	ND
	9/13/01	ND	ND	ND	ND	ND	3	ND
MW-09D	12/19/94	ND	ND	ND	ND	ND	ND	ND
	5/21/96	ND	ND	ND	ND	ND	ND	ND
	8/13/97	ND	ND	ND	ND	ND	ND	ND
	3/18/98	ND	ND	ND	ND	ND	ND	ND
	9/2/98	NS	NS	NS	NS	NS	NS	NS
	3/18/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	ND	ND	ND	ND	ND	ND	ND
	3/28/00	ND	ND	ND	ND	ND	ND	ND
	9/8/00	ND	ND	ND	ND	ND	ND	ND
	3/8/01	ND	ND	ND	ND	ND		ND
	9/13/01	ND	ND	ND	ND	ND	- 3	ND
MW-10S	12/19/94	7.8	ND	ND	ND	ND		ND
	5/29/96	30	1	ND	ND	ND		ND
	8/13/97	15	ND	ND	ND	ND		ND
	3/18/98	NS	NS	NS	NS	NS		NS
	9/2/98	8	ND	ND	ND	ND		ND
	3/18/99	ND	ND	ND	ND	ND		ND
	9/2/99	7	ND	ND	ND	ND		ND
	3/28/00	1	ND	ND	ND	ND		ND
	9/8/00	3	ND	ND	ND	ND	ND	ND
	3/8/01	ND	ND	ND	ND	ND	ND	ND
	9/13/01	6	ND	ND	ND	ND	ND	ND

- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.
- 7. Data presented includes actual and estimated concentrations based on Level IV Data Validation Procedures. Refer to analyt data and data validation report for additional descriptions.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

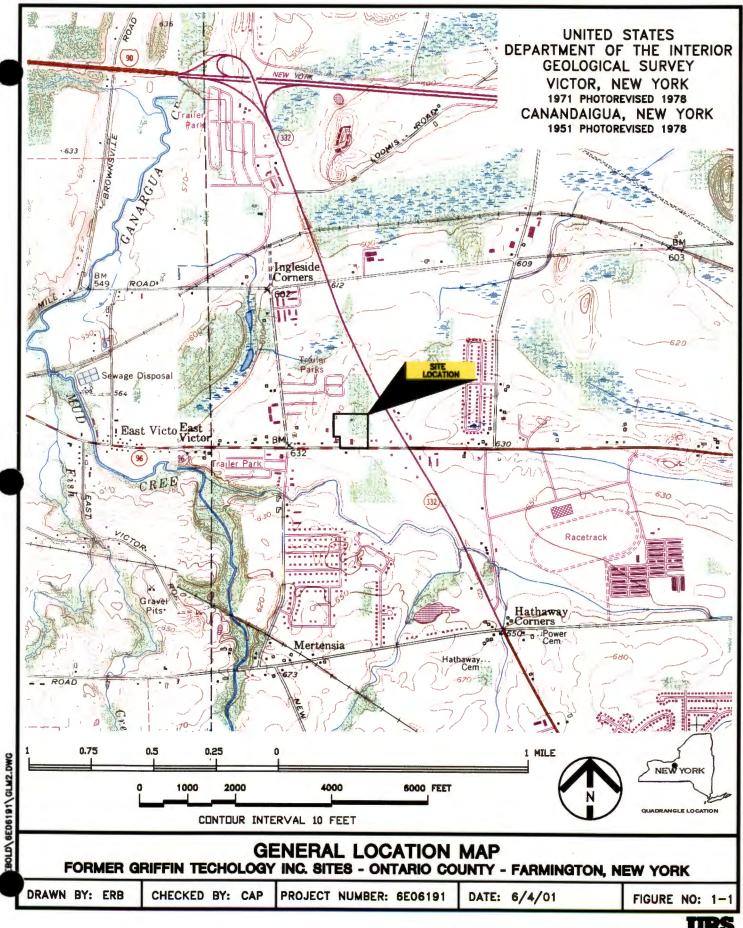
Monitoring	Sample			CIS-				VINYL
Well No.	Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES	1,1-DCE	ACETONE	CHLORIDI
MW-10D	12/19/94	8.2	ND	ND	ND	ND	ND	ND
	5/29/96	8	ND	ND	ND	ND	ND	ND
	8/13/97	15	ND	ND	ND	ND	ND	ND
	3/18/98	NS	NS	NS	NS	NS	NS	NS
	9/2/98	9	ND	ND	ND	ND	ND	ND
	3/18/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	7	ND	ND	ND	ND	ND	ND
	3/28/00	3	ND	ND	ND	ND	ND	ND
	9/8/00	6	ND	ND	ND	ND	ND	ND
	3/8/01	5	ND	ND	ND	ND	ND	ND
	9/13/01	6	ND	ND	ND	ND	ND	ND
MW-11D	4/11/96	ND	ND	ND	ND	ND	ND	ND
	5/21/96	ND	ND	ND	ND	ND	ND	ND
	8/13/97	ND	ND	ND	ND	ND	ND	ND
	3/18/98	ND	ND	ND	ND	ND	ND	ND
	9/2/98	ND	ND	ND	ND	ND	ND	ND
	3/18/99	ND	ND	ND	ND	ND	ND	ND
	9/2/99	ND	ND	ND	ND	ND	ND	ND
	3/28/00	ND	ND	ND	ND	ND	ND	ND
	9/8/00	ND	ND	ND	ND	ND	ND	ND
	3/8/01	ND	ND	ND	ND	ND	ND	ND
	9/13/01	ND.	ND	ND	ND	ND	ND	ND
MW-13D	4/11/96	610	5	4	ND	ND	ND	ND
	5/21/96	190	5	4	ND	ND	ND	ND
	8/13/97	160	4	4	ND	ND	ND	ND
	3/18/98	110	2	ND	ND	ND	ND	ND
	9/2/98	140	3	2	ND	ND	ND	ND
	3/17/99	120	2	2	ND	ND	ND	ND
	9/2/99	140	3	2	ND	ND	ND	ND
	3/28/00	85	2	ND	ND	ND	ND	ND
	9/8/00	140	ND	ND	ND	ND	ND	ND
	3/8/01	88	2	ND	ND	ND	ND	ND
	9/13/01	120	2	ND	ND	ND	ND	ND

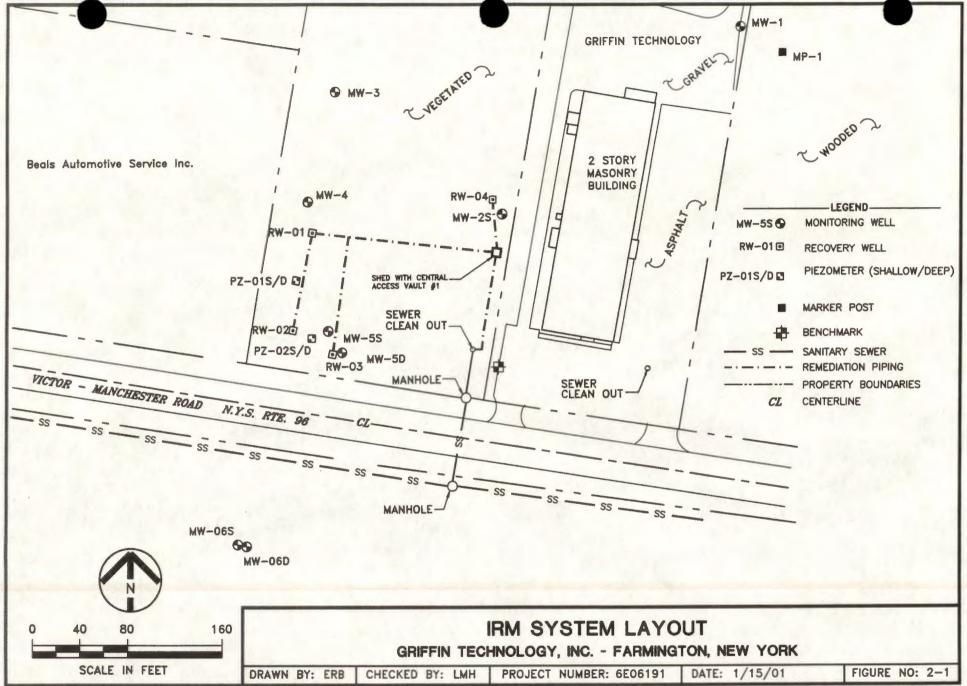
- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.
- Data presented includes actual and estimated concentrations based on Level IV Data Validation Procedures. Refer to analyt data and data validation report for additional descriptions.

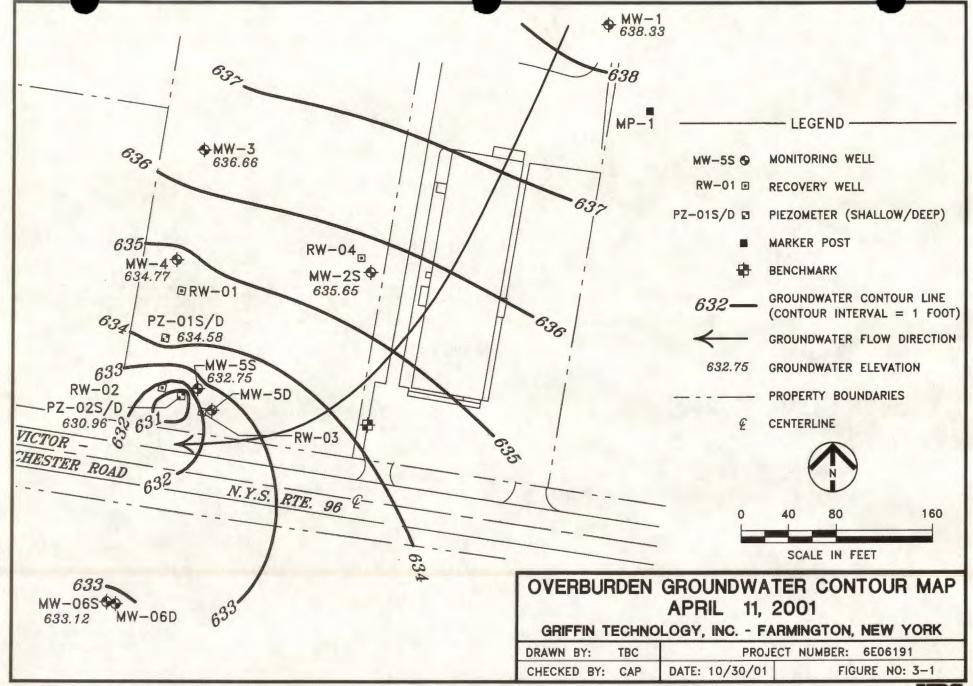
TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

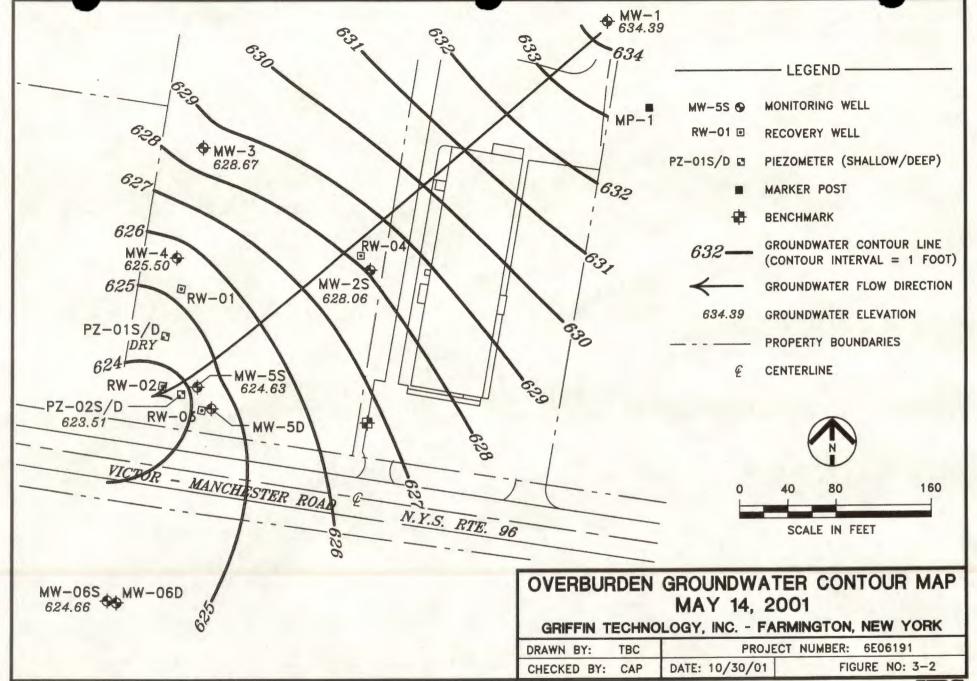
Monitoring Well No.	Sample Date	TCE	1,1,1-TCA	CIS- 1,2-DCE	XYLENES	1,1-DCE	ACETONE	VINYL CHLORIDE		
RW-1	3/28/00	140	3	3	ND	ND	ND	ND		
	9/8/00			No sample o	collected due to	low dischar	ge.			
	3/8/01	220	4	5	ND	ND	ND	ND		
	9/13/01	440	8	9	ND	ND	2	ND		
RW-2	3/28/00	100	2	ND	ND	ND	ND	ND		
	9/8/00		No sample collected due to low discharge.							
	3/8/01	140	3	ND	ND	ND	ND	ND		
	9/13/01		No sample collected due to low discharge.							
RW-3	3/28/00	170	4	ND	ND	ND	ND	ND		
	9/8/00		No sample collected due to low discharge.							
	3/8/01	180	4	ND	ND	ND	ND	ND		
	9/13/01	160	3	1	ND	ND	3	ND		
RW-4	3/28/00	1,000	22	11	ND	1	5	ND		
	9/8/00	760	ND	ND	ND	ND	ND	ND		
	3/8/01	840	16	8	ND	ND	ND	ND		
	9/13/01			No sample o	collected due to	low dischar	rge.			

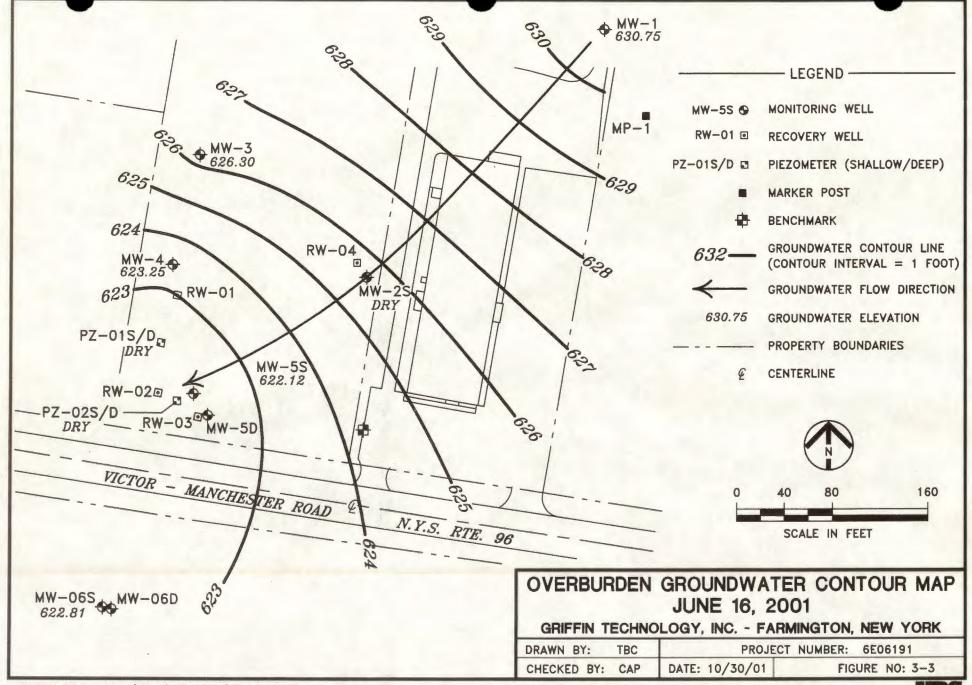
- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.
- 7. Data presented includes actual and estimated concentrations based on Level IV Data Validation Procedures. Refer to analyt data and data validation report for additional descriptions.

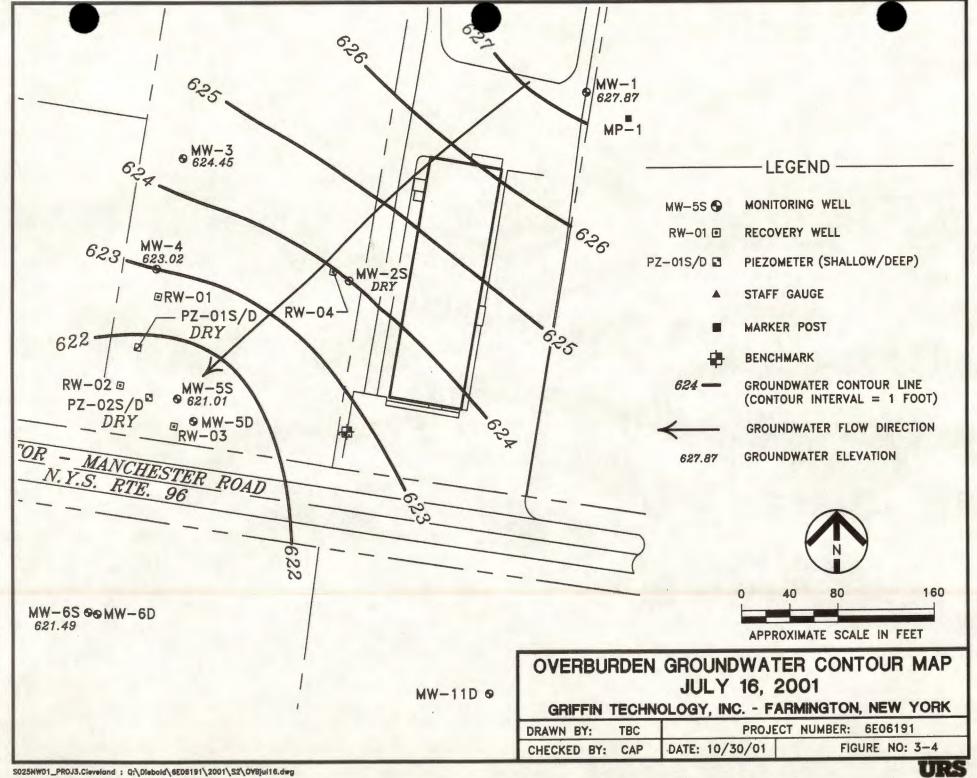


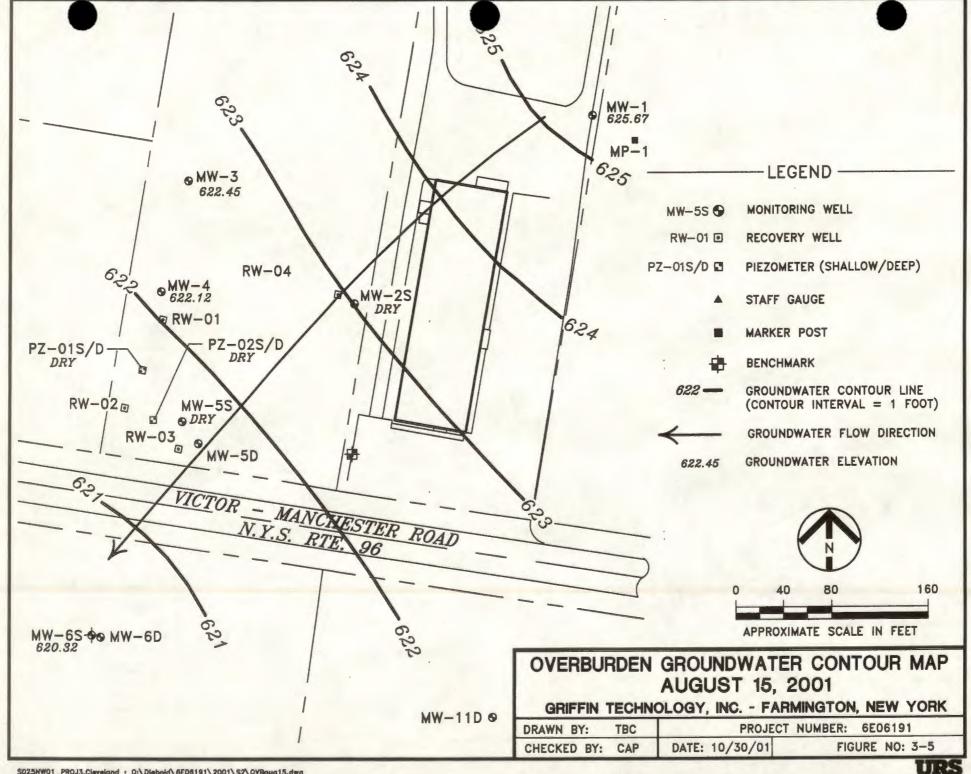


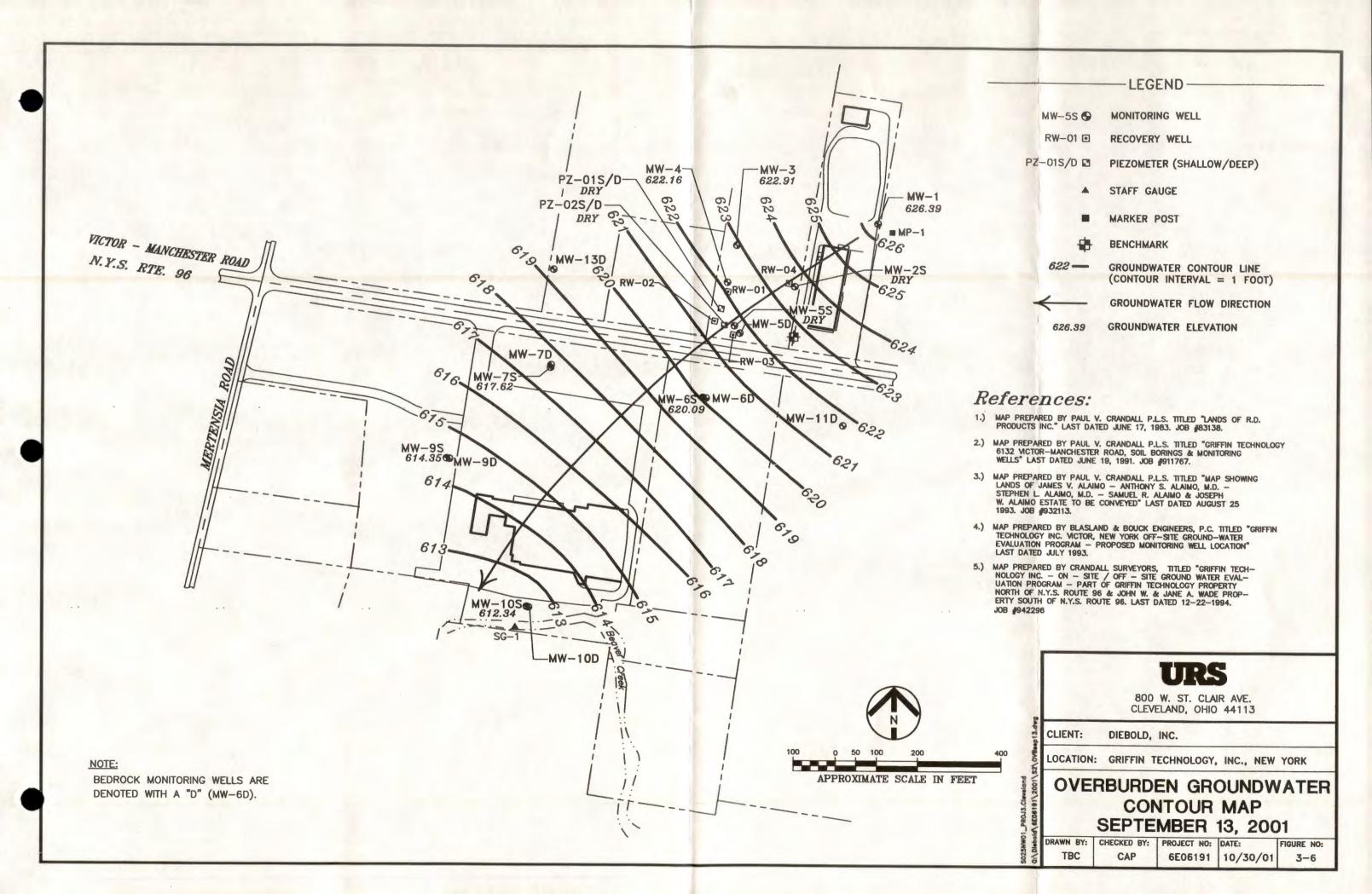


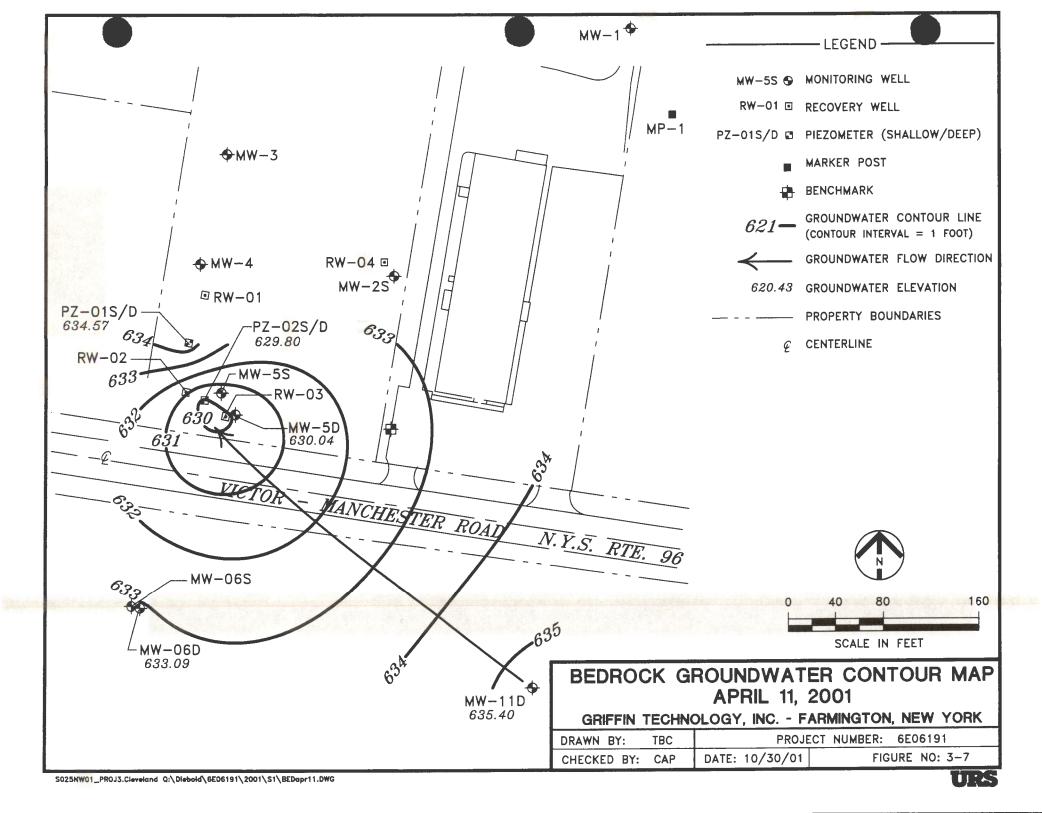


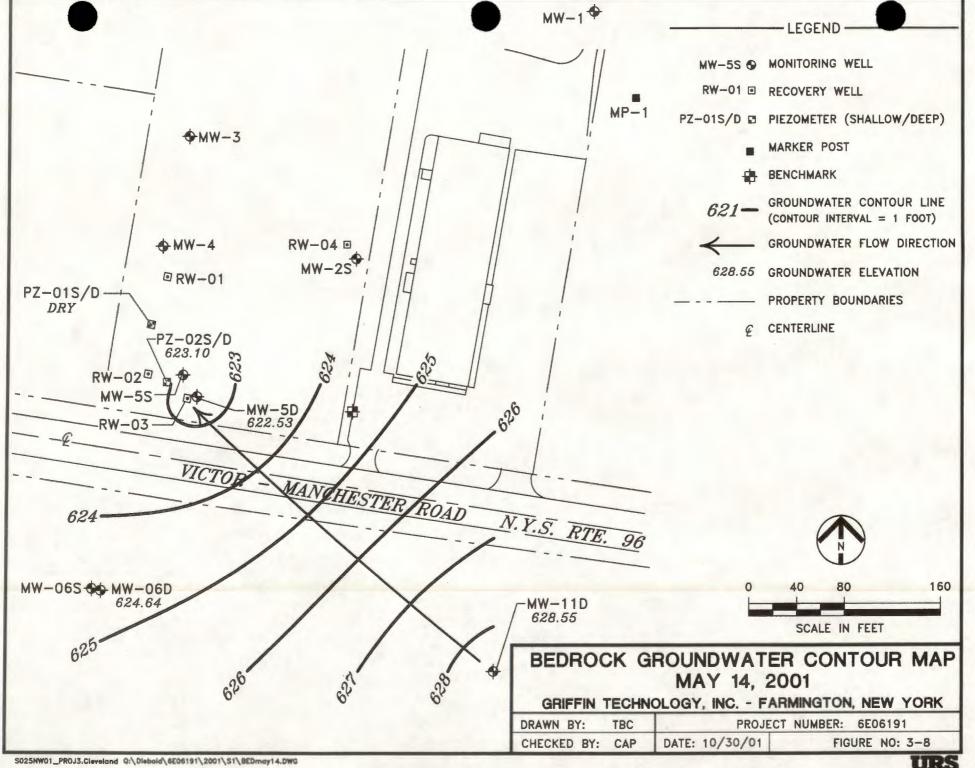


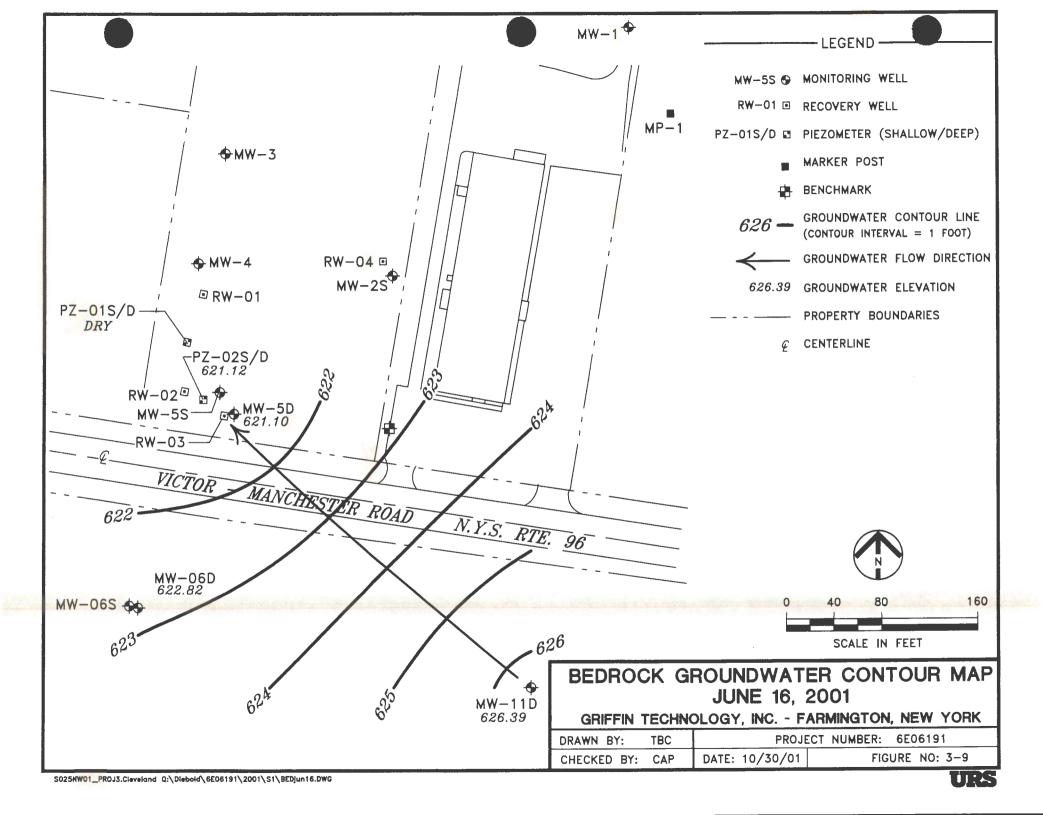


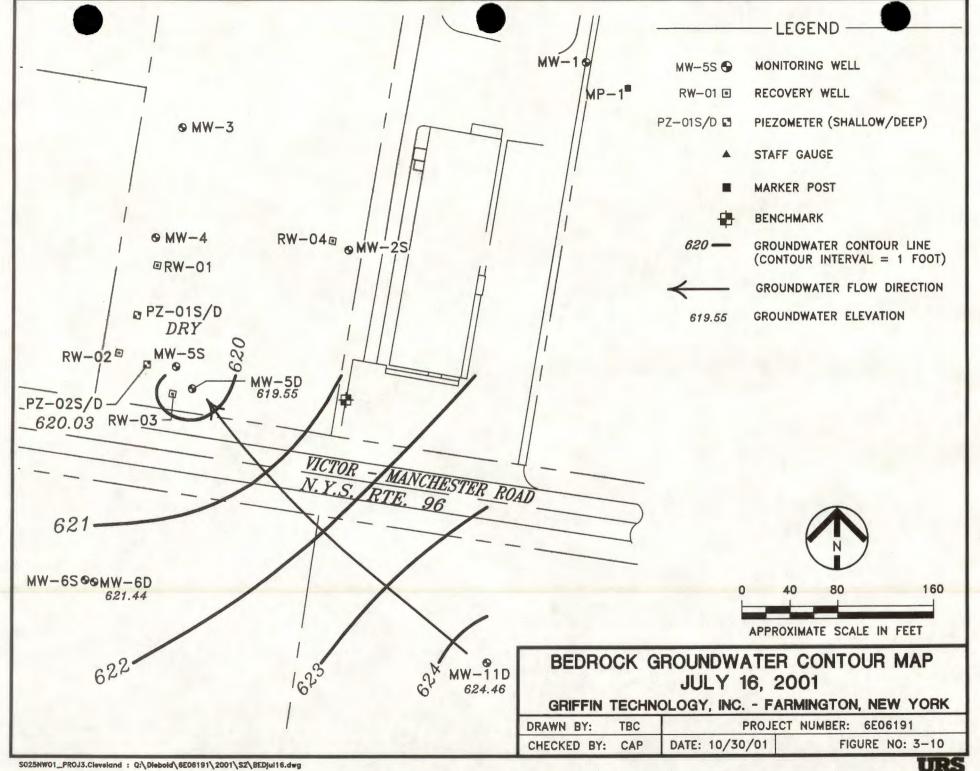


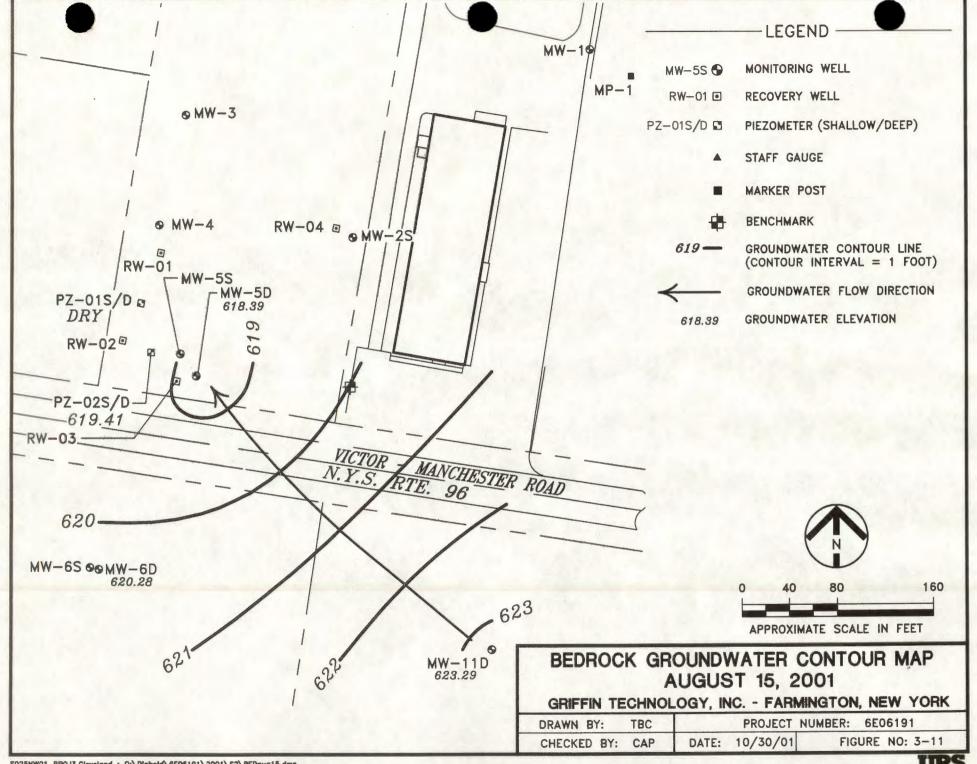


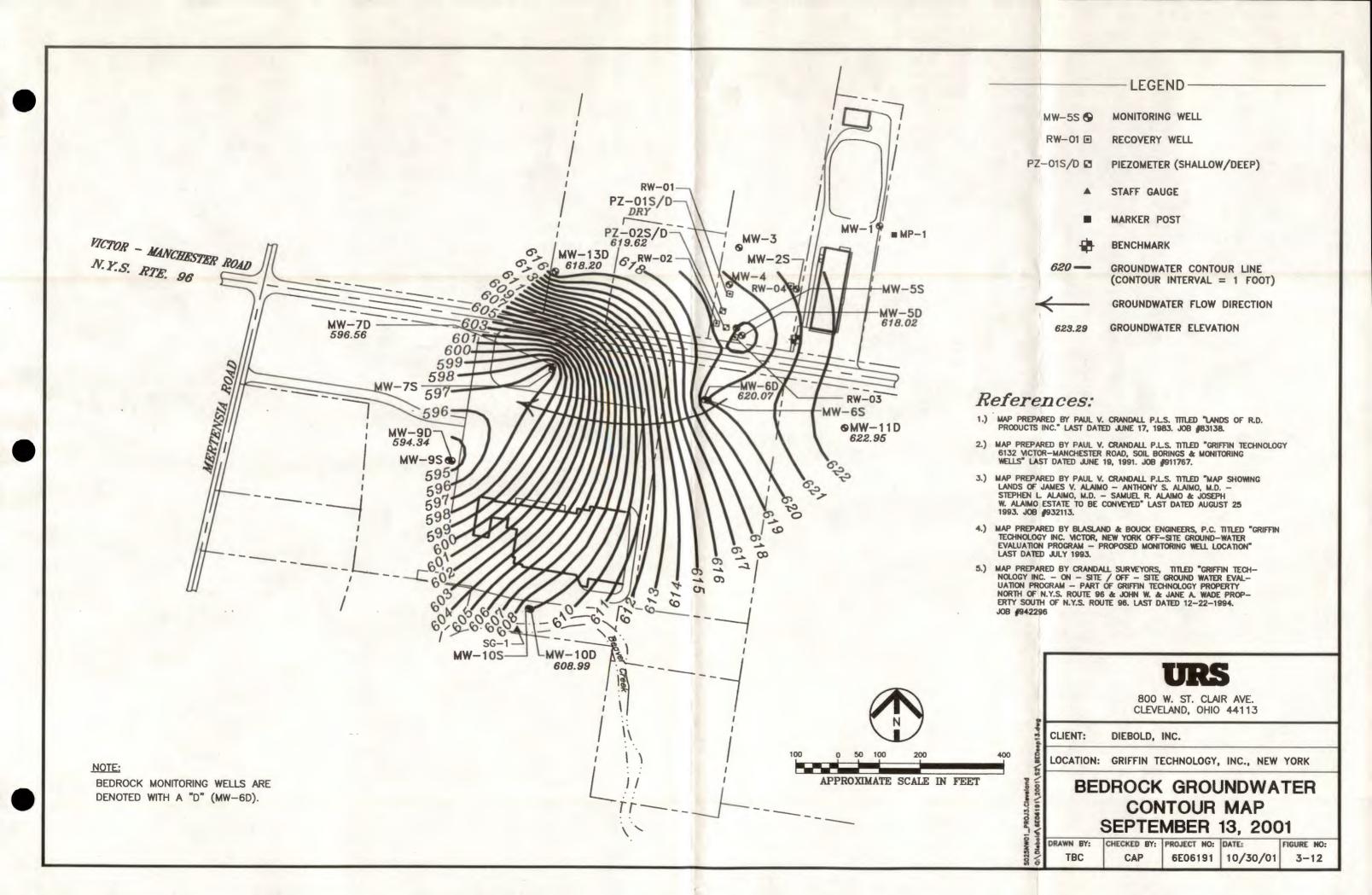














A FULL SERVICE ENVIRONMENTAL LABORATORY

May 2, 2001

Mr. Ken Armstrong URS Corporation 623 West St. Clair Ave Cleveland, OH 44143

PROJECT:GRIFFIN IRM Submission #:R2106547

Dear Mr. Armstrong

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.

URS



1 Mustard ST. Suite 250 Rochester, NY 14609

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : URS Corporation

Project Reference: GRIFFIN IRM

Lab Submission # : R2106547
Reported : 05/02/01

Report Contains a total of _____ pages

The results reported herein relate only to the samples received by the laboratory. This report may not be reproduced except in full, without the approval of Columbia Analytical Services.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director to comply with NELAC standards prior to report submittal.



CASE NARRATIVE

This report contains analytical results for the following samples:

Submission #: R2106547

Lab ID 454628

Client ID

EFF-4-11-01

All samples were received in good condition.

All samples have been analyzed by the approved methods cited on the analytical results pages.

1 holding times and associated QC were within limits.

No analytical or QC problems were encountered.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- This flag is used when the analyte is found in the associated blank as well as in the sample.
- This flag identifies compounds whose concentrations exceed the calibration range.
- This flag indicates that a TIC is a suspected aldol-condensation product.
- Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analysis only)
- Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: CT ID # in Rochester: MA ID # in Rochester: AIHA # in Rochester:

10145 PH0556 M-NY032 7889

NJ ID # in Rochester: RI ID # in Rochester: NH ID # in Rochester: 294198-A

73004 158

COLUMBIA ANALYTICAL RVICES

VOLATI ORGANICS METHOD 8260B TCL Reported: 05/02/01

URS Corporation

Project Reference: GRIFFIN IRM Client Sample ID: EFF-4-11-01

Date Sampled: 04/11/01 Order #: 454628 Sample Matrix: WATER Date Received: 04/12/01 Submission #: R2106547 Analytical Run 63503

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/17/			
ANALYTICAL DILUTION:	2.00		
ACETONE	20	40 U	UG/L
BENZENE	5.0	10 U	UG/L
BROMODICHLOROMETHANE	5.0	10 U	UG/L
BROMOFORM	5.0	10 U	UG/L
BROMOMETHANE	5.0	10 U	UG/L
2-BUTANONE (MEK)	10	20 U	UG/L
CARBON DISULFIDE	10		
CARBON TETRACHLORIDE		20 U	UG/L
CHLOROBENZENE	5.0	10 U	UG/L
	5.0	10 U	UG/L
CHLOROETHANE	5.0	10 U	UG/L
CHLOROFORM	5.0	10 U	UG/L
CHLOROMETHANE	5.0	10 U	UG/L
IBROMOCHLOROMETHANE	5.0	10 U	UG/L
1-DICHLOROETHANE	5.0	10 U	UG/L
2-DICHLOROETHANE	5.0	10 U	UG/L
,1-DICHLOROETHENE	5.0	10 U	UG/L
SIS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
RANS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
,2-DICHLOROPROPANE	5.0	10 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
RANS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
THYLBENZENE	5.0	10 U	UG/L
-HEXANONE	10	20 U	UG/L
ETHYLENE CHLORIDE	5.0	10 U	
-METHYL-2-PENTANONE (MIBK)	10		UG/L
TYRENE		20 U	UG/L
1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
ETRACHLOROETHENE	5.0	10 U	UG/L
OLUENE	5.0	10 U	UG/L
	5.0	10 U	UG/L
,1,1-TRICHLOROETHANE	5.0	10 U	UG/L
,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
RICHLOROETHENE	5.0	210	UG/L
INYL CHLORIDE	5.0	10 U	UG/L
-XYLENE	5.0	10 U	UG/L
+P-XYLENE	5.0	10 U	UG/L
SURROGATE RECOVERIES	QC LIMITS		
BROMOFLUOROBENZENE	(86 - 115 %)	103	8
LUENE-D8	(88 - 110 %)	99	96
IBROMOFLUOROMETHANE		22	Ti di

COLUMBIA ANALYTICAL 'RVICES

VOLATI ORGANICS
METHOD 8260B TCL
Reported: 05/02/01

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled: Date Received: Subm	Order #:	458522	Sample Ma Analytica			
ANALYTE		PQL	RES	ULT	UNITS	
DATE ANALYZED : 04/17/0						
ANALYTICAL DILUTION: 1	00					
ACETONE		20	20	U	UG/L	
BENZENE		5.0	5.0	U	UG/L	
BROMODICHLOROMETHANE		5.0	5.0	U	UG/L	
BROMOFORM		5.0	5.0	U	UG/L	
BROMOMETHANE		5.0	5.0	U	UG/L	
2-BUTANONE (MEK)		10		U	UG/L	
CARBON DISULFIDE		10		U	UG/L	
CARBON TETRACHLORIDE		5.0	5.0		UG/L	
CHLOROBENZENE		5.0	5.0		UG/L	
CHLOROETHANE		5.0	5.0		UG/L	
CHLOROFORM		5.0	5.0		UG/L	
CHLOROMETHANE		5.0	5.0		UG/L	
DIBROMOCHLOROMETHANE		5.0	5.0		UG/L	
1 1-DICHLOROETHANE		5.0	5.0		UG/L	
2-DICHLOROETHANE		5.0	5.0		UG/L	
1,1-DICHLOROETHENE		5.0	5.0		UG/L	
CIS-1,2-DICHLOROETHENE		5.0	5.0		UG/L	
TRANS-1,2-DICHLOROETHENE		5.0	5.0		UG/L	
1,2-DICHLOROPROPANE		5.0	5.0		UG/L	
CIS-1,3-DICHLOROPROPENE		5.0	5.0		UG/L	
TRANS-1,3-DICHLOROPROPENE		5.0	5.0		UG/L	
ETHYLBENZENE		5.0	5.0		UG/L	
2-HEXANONE		10		Ū	UG/L	
METHYLENE CHLORIDE		5.0	5.0		UG/L	
4-METHYL-2-PENTANONE (MIBK)		10		U	UG/L	
STYRENE		5.0	5.0		UG/L	
1,1,2,2-TETRACHLOROETHANE		5.0	5.0		UG/L	
TETRACHLOROETHENE		5.0	5.0		UG/L	
TOLUENE		5.0	5.0		UG/L	
1,1,1-TRICHLOROETHANE		5.0	5.0		UG/L	
1,1,2-TRICHLOROETHANE		5.0	5.0		UG/L	
TRICHLOROETHENE		5.0	5.0		UG/L	
VINYL CHLORIDE		5.0	5.0		UG/L	
O-XYLENE		5.0	5.0			
M+P-XYLENE		5.0	5.0		UG/L UG/L	
SURROGATE RECOVERIES	QC LIM	ITS				
4-BROMOFLUOROBENZENE	(86 - :	115 %)	101		ક	
LUENE-D8		110 %)	98		8	
BROMOFLUOROMETHANE		L18 %)	106		8	



CHAIN OF CUSTODY/LABORATORY

Y	ANAI	YSIS	REQUE	ST FORM
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SR#	· ·
CAS Contact	

www.caslab.com	lard St., Suite 250 • Hochester, I	11 14009-00	109 - (710) 2	00-0000 0	00-090	-1222	XIII	AX (/I	0) 200	0-04/0	FAC	JE _	-		JF			CA	S Cont	act			
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(216)422 - 2400 Sampler's Signature	Sample's Printed Nar	41-7	083	-	JMBE	MIS	18 Se	2/2	571	48.78	4 A B	10 2 d	STA	eac!	百五	1 /1	b/	/					
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CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMF DATE	PLING TIME	MATRIX		6.	-		7			NIE .		_				1440 00 2		-		1	
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SPECIAL INSTRUCTIONS/COMMENTS							TL	JRNAR	OUND	REQUI	REMEN	ITS		REPO	ORT RE	QUIRE	EMENT	S	T	INVC	ICE INF	ORMATIC	ON _
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							REQUI	ESTED F	REPORT	DATE				IV. Data	Validati	ion Repo	ort with A	aw Data	1	10/	1		
See QAPP							~			-				V. Speid	calized F	Forms / (Custom F	leport	1	111	65	41	
SAMPLE RECEIPT: CONDITION/COC	OLER TEMP: 12		CUS	TODY SEAL	S: Yo	N)		6	lives	1.1			Edata		_ Yes	N	io	SUB	MISSION	# :-		
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Distribution: White - Return to Originator: Vello		7	Tiple 11/	1			arater [1						Date						Date	Time		SC	OC-0101-08
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Cooler Receipt And Preservation Check Form

Were custoder Were custoder Did all bottle Did any VC Were Ice on Where did to Temperature Is the temperature Is the temperature Date/Time Thermometer	dy seals on outside dy papers properly es arrive in good of A vials have significate packs present the bottles originate of cooler(s) upor ture within 0° - 6° C? In Below Temperatures Take er ID:	e of coo filled o conditio ficant ai t? e? n receip	ler? out (ink n (unb r bubb	yes	Rule	YES YES YES YES CAS	MO NO N/A	LIENT
Were custoder Did all bottle Did any VO Were Ice or Where did to Temperature Is the temperature Date/Time Thermometer out of Temperature out of Temperature	dy papers properly es arrive in good o A vials have signif Toe packs present he bottles originate e of cooler(s) upor ture within 0° - 6° C? n Below Temperatures Take er ID:	r filled or condition ficant air t? e? n receip	ut (ink n (unb r bubb t:	roken)? les? /// /2	. Rule	YES YES YES YES YES	NO N/A NO N/A NO ROC, CLIENT	
If No, Explain Date/Time Thermometer out of Temperature	n Below Temperatures Take er ID:	en:		. /			Yes 🗆 Yes 🔾	
Date/Time Thermomete	Temperatures Take	T		No of	10 D.			
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out of Temperature			CHID T	Blank Sam	ole Bottle	Cooler Ten	np. (IR Gun	
Did all bottle Were correct	tle labels complete e labels and tags ag t containers used for Cassettes / Tub noies:	or the t	h custo ests inc	ody papers? dicated?		YE Tedlar®	SNO SNO Bags Inflated	NVA)
		YES	NO	Sample LD.	Rea	gent	Vol. Added	
pH	Reagent							
. 12	NaOH							
2	HNO ₃					•		
2	H ₂ SO ₄				w			
esidual Chlorine (+/-)	for TCN & Phenol					•		-
5-9*	P/PCBs (608 only)							
S = All samples OK	NO = Same		preserv	od at lab as listo	PC PC	OK to adjust p	H	
	C Vial pH Verification				•			

Other Commente.



A FULL SERVICE ENVIRONMENTAL LABORATORY

1 4 200

URS

June 4, 2001

Mr. Ken Armstrong URS Corporation 623 West St. Clair Ave Cleveland, OH 44143

PROJECT:GRIFFIN IRM Submission #:R2106937

Dear Mr. Armstrong

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



1 Mustard ST. Suite 250 Rochester, NY 14609

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : URS Corporation

Project Reference: GRIFFIN IRM

Lab Submission # : R2106937
Reported : 06/04/01

Report Contains a total of _____ pages

The results reported herein relate only to the samples received by the laboratory. This report may not be reproduced except in full, without the approval of Columbia Analytical Services.

This package has been reviewed by Columbia Analytical Services' QA

Department/Laboratory Director to comply with NELAC standards prior
to report submittal.



CASE NARRATIVE

This report contains analytical results for the following samples:

Submission #: R2106937

Lab ID

Client ID

463190

EFF-5-14-01

All samples were received in good condition.

All samples have been analyzed by the approved methods cited on the analytical results pages.

holding times and associated QC were within limits.

No analytical or QC problems were encountered.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits. (Flag the entire batch Inorganic analysis only)
- * Duplicate analysis not within control limits.

 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: CT ID # in Rochester:

10145

NJ ID # in Rochester:

73004 158

MA ID # in Rochester:

PH0556 M-NY032

RI ID # in Rochester: NH ID # in Rochester:

294198-A

AIHA # in Rochester:

7889

COLUMBIA ANALYTICAL SERVICES

VOLATI ORGANICS
METHOD 6260B TCL
Reported: 06/04/01

URS Corporation

Project Reference: GRIFFIN IRM Client Sample ID: EFF-5-14-01

Date Sampled: 05/14/01 Order #: 463190 Sample Matrix: WATER Date Received: 05/14/01 Submission #: R2106937 Analytical Run 65027

Date Received: 03/14/01 Subi	A R2106937 A	nalytical Run	65027
ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/23/0)1		
ANALYTICAL DILUTION: 2	2.00		
ACETONE	20	40 U	UG/L
BENZENE	5.0	10 U	UG/L
BROMODICHLOROMETHANE	5.0	10 U	UG/L
BROMOFORM	5.0	10 U	UG/L
BROMOMETHANE	5.0	10 U	UG/L
2-BUTANONE (MEK)	10	20 U	UG/L
CARBON DISULFIDE	10	20 U	UG/L
CARBON TETRACHLORIDE	5.0	10 U	UG/L
CHLOROBENZENE	5.0	10 U	UG/L
CHLOROETHANE	5.0	10 U	UG/L
CHLOROFORM	5.0	10 U	UG/L
CHLOROMETHANE	5.0	10 U	UG/L
DIBROMOCHLOROMETHANE	5.0	10 U	UG/L
1-DICHLOROETHANE	5.0	10 U	
, 2-DICHLOROETHANE	5.0	10 U	UG/L
1,1-DICHLOROETHENE	5.0	10 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0		UG/L
1,2-DICHLOROPROPANE	5.0	10 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
ETHYLBENZENE	5.0	10 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE		20 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0	10 U	UG/L
STYRENE	10	20 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
TETRACHLOROETHENE	5.0 5.0	10 U	UG/L
TOLUENE		10 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	10 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
PRICHLOROETHENE	_5.0	10 U	UG/L
VINYL CHLORIDE	5.0	390	UG/L
O-XYLENE	5.0	10 U	UG/L
M+P-XYLENE	5.0 5.0	10 U 10 U	UG/L UG/L
SURROGATE RECOVERIES	QC LIMITS		
BROMOFLUOROBENZENE	(86 - 115 %)	101	*
LUENE-D8	(88 - 110 %)	104	8
DIBROMOFLUOROMETHANE	(86 - 118 %)	102	9

COLUMBIA ANALYTICAL SERVICES

VOLATI ORGANICS METHOD 0260B TCL Reported: 06/04/01

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received:	Order # Submission #	467955	Sample Matrix: Analytical Run	
ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED :	05/23/01			
ANALYTICAL DILUTION:	1.00			
ACETONE		20		(-
BENZENE		20	20 U	UG/L
BROMODICHLOROMETHANE		5.0 5.0	5.0 U	UG/L
ROMOFORM		5.0	5.0 U	UG/L
BROMOMETHANE		5.0	5.0 U	UG/L
-BUTANONE (MEK)		10	5.0 U	UG/L
CARBON DISULFIDE		10	10 U	UG/L
CARBON TETRACHLORIDE		5.0	10 U	UG/L
CHLOROBENZENE		5.0	5.0 U	UG/L
CHLOROETHANE		5.0	5.0 U 5.0 U	UG/L
HLOROFORM		5.0		UG/L
HLOROMETHANE		5.0	5.0 U	UG/L
IBROMOCHLOROMETHANE		5.0	5.0 U	UG/L
,1-DICHLOROETHANE		5.0	5.0 U	UG/L
2-DICHLOROETHANE		5.0	5.0 U 5.0 U	UG/L
, 1-DICHLOROETHENE		5.0	5.0 U	UG/L
IS-1,2-DICHLOROETHENE		5.0	5.0 U	UG/L
RANS-1,2-DICHLOROETHE		5.0	5.0 U	UG/L
, 2-DICHLOROPROPANE		5.0	5.0 U	UG/L
IS-1,3-DICHLOROPROPEN	E	5.0	5.0 U	UG/L
RANS-1,3-DICHLOROPROP	ENE	5.0	5.0 U	UG/L UG/L
THYLBENZENE		5.0	5.0 U	UG/L
-HEXANONE		10	10 U	UG/L
ETHYLENE CHLORIDE		5.0	5.0 U	UG/L
-METHYL-2-PENTANONE ()	MIBK)	10	10 U	UG/L
TYRENE		5.0	5.0 U	UG/L
,1,2,2-TETRACHLOROETH	ANE	5.0	5.0 U	UG/L
ETRACHLOROETHENE		5.0	5.0 U	UG/L
OLUENE		5.0	5.0 U	UG/L
,1,1-TRICHLOROETHANE		5.0	5.0 U	UG/L
,1,2-TRICHLOROETHANE		5.0	5.0 U	UG/L
RICHLOROETHENE		5.0	5.0 U	UG/L
INYL CHLORIDE		5.0	5.0 U	UG/L
-XYLENE		5.0	5.0 U	UG/L
+P-XYLENE		5.0	5.0 U	UG/L
SURROGATE RECOVERIES	QC LI	MITS		
-BROMOFLUOROBENZENE	(86 -	115 %)	100	8
OLUENE-D8	(88 -		102	8
BROMOFLUOROMETHANE	(86 -		101	ક



An An Scal (716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

An Employee Owned Cumpany																D	ATE_) - /	7-6	1	PAGE)F_/	
PROJECT NAME 61	iffin	II	em										A	NAL	YSIS	RE	QUI	EST	ED							
PROJECT MANAGER/CO													Q	Z :										PRES	SERVA	TION
COMPANY (ADDDESS	12115	LA CIA	in = 1 · · · · · · ·		-		□ 95-1	□ 95-2		5.3	A's	OA's	D H/P	ATIC												
COMPANT/ADDRESS	6242	T. CIG	1611.12		-	HS	6	6	2	80	18	SV	S	ERIZ S.		Æ										
Cleveland	Uh	0	44/13		_	Z			1/60	SCB'	227	22	ALS 10A	CTE	1	OLV										
COMPANY/ADDRESS	2400	FAX (2	16) 241-3	083	-	OF CONTAINERS	GC/MS VOA's □ 8260 □ 624	GC/MS SVOA's	GC VOA's	PESTICIDES/PCB's □ 8081 □ 608 □ 95-3	STAR'S LIST 8021 VOA'S	STAR'S LIST 8270 SVOA'S	MET,	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	40									
SAMPLER'S SIGNATURE	Cos	- Tar	42~		-	0	NS NS	MS 570	20A	DE 8	R'S TA	R'S TAI	DA'S	TE (ALS	ALS F BE	25							2.0	12	
SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE		5	GC/I	GC/I	00 00 00 00 00 00 00 00 00 00 00 00 00	PES D	STAI	STAI	TCL	WAS	MET,	MET. (LIST	22	-						PH <	Ť,	Other
EFF-5-14-01	5-14-01	13:20	763190	WATER	2	2											X								1	-
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				TU TU																						
Signature 3 of Fabrican Printed Name (, e s Firm 5-14-01 13: Date/Time		Signature Printed Nami	RECEIVED BY: CAS 4/61 /35	- - -	24 hr. Standar Provide	48 d (10-1 Verbal	l8 hr. 15 work	LIREM 5 controlled the second	day ys) Results	1. 2. 3.	Routine Routine Narrative EPA Lev Validatal	Rep. w/ e /el III ble Pack	CASE	NTS	P.O. #			ORMA	TION:	_	Shippin	SAM ng Via: ng #: rature: _	Cl	receip Tent		
		Date/Time						nary Res	sults		N.J. Red Delivera	duced bles Lev	rel IV							-			0	. 1	07	7
RELINQUISHED B	Y:		RECEIVED BY:	Req	uested	Report	Date _		-			/CLP De		es	-						Submis	ssion No:	10	7	272	7_
Signature		Signature								6.	Site spe	cific QC														
Printed Name		Printed Name	9	SF	PECIA	LINS	STRL	JCTIC	ONS/C	OMM	ENTS	:														
Firm		Firm		M	ETALS	}																				
Date/Time		Date/Time			30 44	CC.		TOL		31 E	1 4 5 6	2-4-		10-1												
RELINQUISHED BY	Y:		RECEIVED BY:	0	IGAN	05:		ICL	☐ PF	-L	JAE	July	□ BL	Only		Specia	LIST									
Signature		Signature																								
Printed Name	1	Printed Name																								
Firm		Firm																								
Date/Time		Date/Time																								

Columbia Analytical Services Inc. Cooler Receipt And Preservation Che

If No, Explain Below Date/Time Temperatures Taken: Thermometer ID: IR-GUAY Temp Blank Sample Bottle Cooler Temp. Thermometer ID: IR-Gun Temp Blank Sample Bottle Cooler Temp. Temp Blank Sample Bottle Cooler T		WCC4	-		Su	ubmission Number_	K2-6937
Were custody papers properly filled out (ink, signed, etc.)? Did all bottles arrive in good condition (unbroken)? Did any VOA vials have significant air bubbles? Were Ice or Ice packs present? Where did the bottles originate? Temperature of cooler(s) upon receipt: Is the temperature within 0° - 6° C?: Is the temperature within 0° - 6° C?: If No, Explain Below No N	sooler received o	n_5/14/67by:_	120	8	COURIER: CA	S UPS FEDEX	CD&L CLIE
Is the temperature within 0° - 6° C?: If No, Explain Below No N	Did all both Did any V Were Ice Where did	ody papers properly titles arrive in good co OA vials have significated or Ice packs present	filled or ondition cant air ?	ut (ink, 1 (unbr bubble	oken)?	YES YES	NO NO NO N/A
If No, Explain Below Date/Time Temperatures Taken: Thermometer ID: IR-GUN Temp Blank Sample Bottle Cooler Temp. Temp Blank Sample C	•				Yes V Yes [Yes 🗆	Yes 🗆 Yes 🗆
Thermometer ID:					No D No D		
fout of Temperature, Client Approval to Run Samples Cooler Breakdown: Date: 5-5-6-0 by: #E I. Were all bottle labels complete (i.e. analysis, preservation, etc.)? #E NO Did all bottle labels and tags agree with custody papers? #E Were correct containers used for the tests indicated? #E Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated explain any discrepancies: YES NO Sample ID. Reagent Vol. Added pH Reagent PHNO3 2 HNO3 2 HySO4 Residual Chlorine (+/-) for TCN & Phenol FSO4 VOC Vial pH Verification (Tested after Analysis) Following Samples	Date/Time	e Temperatures Take	n:		5/14/07	1357	
Cooler Breakdown: Date: 5-5-01 by: #E Were all bottle labels complete (i.e. analysis, preservation, etc.)? Did all bottle labels and tags agree with custody papers? Were correct containers used for the tests indicated? Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated Explain any discrepancies: YES NO Sample LD. Reagent Vol. Added pH Reagent 12 NaOH 2 HNO3 2 HNO4 Residual Chlorine (+/-) for TCN & Phenol 5-9* P/PCBs (608 only) TES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH (Tested after Analysis) Following Samples	Thermom	eter ID: IR-bun	T	emp B	Blank Sample E	Sottle Cooler Tem	p. (TR. Gun
Cooler Breakdown: Date: 5-0 by: #E Were all bottle labels complete (i.e. analysis, preservation, etc.)? Did all bottle labels and tags agree with custody papers? Were correct containers used for the tests indicated? Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated explain any discrepancies: YES NO Sample I.D. Reagent Vol. Added pH Reagent 12 NaOH 2 HNO3 2 H ₂ SO ₄ Residual Chlorine (+/-) for TCN & Phenol 5-9* P/PCBs (608 only) ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH fpH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples	fout of Townsons	on Client Annuaud to	D C.			-•	
pH Reagent 12 NaOH 2 HNO ₃ 2 H ₂ SO ₄ Residual Chlorine (+/-) for TCN & Phenol 5-9* P/PCBs (608 only) ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH f pH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples	apiani any discre	purotos.					
2 HNO ₃ 2 H ₂ SO ₄ Residual Chlorine (+/-) for TCN & Phenol 5-9* P/PCBs (608 only) ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH If pH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples			YES	NO	Sample LD.	Reagent	Vol. Added
2 H ₂ SO ₄ Residual Chlorine (+/-) for TCN & Phenol 5-9* P/PCBs (608 only) ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH If pH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples	pH	Reagent	YES	NO	Sample LD.	Reagent	Vol. Added
Residual Chlorine (+/-) for TCN & Phenol 5-9* P/PCBs (608 only) ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH f pH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples			YES	NO	Sample LD.	Reagent	Vol. Added
5-9* P/PCBs (608 only) ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH If pH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples	· 12	NaOH	YES	NO	Sample LD.	Reagent	Vol. Added
ES = All samples OK NO = Samples were preserved at lab as listed PC OK to adjust pH If pH adjustment is required, use NaOH and/or H ₂ SO ₄ VOC Vial pH Verification (Tested after Analysis) Following Samples	12	NaOH HNO ₃	YES	NO	Sample LD.	Reagent	Vol. Added
If pH adjustment is required, use NaOH and/or H2SO4 VOC Vial pH Verification (Tested after Analysis) Following Samples	· 12 2 2	NaOH HNO ₃ H ₂ SO ₄	YES	NO	Sample LD.	Reagent	Vol. Added
VOC Vial pH Verification (Tested after Analysis) Following Samples	2 2 Residual Chlorine (+	NaOH HNO ₃ H ₂ SO ₄ /-) for TCN & Phenol	YES	NO	Sample LD.	Reagent	Vol. Added
	12 2 2 Residual Chlorine (+ 5-9* /ES = All samples Of	NaOH HNO ₃ H ₂ SO ₄ /-) for TCN & Phenol P/PCBs (608 only) K NO = Sam	ples were				
	2 2 Residual Chlorine (+ 5-9* VES = All samples Of	NaOH HNO ₃ H ₂ SO ₄ /-) for TCN & Phenol P/PCBs (608 only) K NO = Sam quired, use NaOH and/or H VOC Vial pH Verification (Tested after Analysis) Following Samples	iples were				
	12 2 2 Residual Chlorine (+ 5-9* VES = All samples Of	NaOH HNO ₃ H ₂ SO ₄ /-) for TCN & Phenol P/PCBs (608 only) K NO = Sam quired, use NaOH and/or H VOC Vial pH Verification (Tested after Analysis) Following Samples	iples were				
	2 2 Residual Chlorine (+ 5-9* VES = All samples Of	NaOH HNO ₃ H ₂ SO ₄ /-) for TCN & Phenol P/PCBs (608 only) K NO = Sam quired, use NaOH and/or H VOC Vial pH Verification (Tested after Analysis) Following Samples	iples were				

Other Comments:



A FULL SERVICE ENVIRONMENTAL LABORATORY

URS

July 10, 2001

Mr. Ken Armstrong URS Corporation 623 West St. Clair Ave Cleveland, OH 44143

PROJECT:GRIFFIN IRM Submission #:R2107373

Dear Mr. Armstrong

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Jahl. Ax

Enc.



1 Mustard ST. Suite 250 Rochester, NY 14609

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : URS Corporation

Project Reference: GRIFFIN IRM

Lab Submission # : R2107373
Reported : 07/10/01

Report Contains a total of 7 pages

The results reported herein relate only to the samples received by the laboratory. This report may not be reproduced except in full, without the approval of Columbia Analytical Services.

This package has been reviewed by Columbia Analytical Services' QA

Department/Laboratory Director to comply with NELAC standards prior
to report submittal.



CASE NARRATIVE

This report contains analytical results for the following samples:

Submission #: R2107373

<u>Lab ID</u> 471600 Client ID

EFF-6-16-01

All samples were received in good condition.

All samples have been analyzed by the approved methods cited on the analytical results pages.

All holding times and associated QC were within limits.

No analytical or QC problems were encountered.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- Indicates an estimated value. For further explanation see case narrative / cover letter.
- This flag is used when the analyte is found in the associated blank as well as in the sample.
- This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analysis only)
- * Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145 CT ID # in Rochester: PH0556 MA ID # in Rochester: M-NY032 AIHA # in Rochester: 7889

NJ ID # in Rochester: RI ID # in Rochester:

158 NH ID # in Rochester: 294198-A

COLUMBIA ANALYTICAL SEF CES

VOLATILE ORGANICS METHOD 8260B TCL Reported: 07/10/01

URS Corporation

Project Reference: GRIFFIN IRM Client Sample ID : EFF-6-16-01

Date Sampled: 06/16/01 Order #: 471600 Sample Matrix: WATER Date Received: 06/16/01 Submission #: R2107373 Analytical Run 66373

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/27/	01		
	2.00		
ACETONE	20	40 U	UG/L
BENZENE	5.0	10 U	UG/L
BROMODICHLOROMETHANE	5.0	10 U	UG/L
BROMOFORM	5.0	10 U	UG/L
BROMOMETHANE	5.0	10 U	UG/L
2-BUTANONE (MEK)	10	20 U	UG/L
CARBON DISULFIDE	10	20 U	UG/L
CARBON TETRACHLORIDE	5.0	10 Ü	UG/L
CHLOROBENZENE	5.0	10 U	UG/L
CHLOROETHANE	5.0	10 U	UG/L
CHLOROFORM	5.0	10 U	
CHLOROMETHANE	5.0		UG/L
BROMOCHLOROMETHANE		10 U	UG/L
,1-DICHLOROETHANE	5.0	10 U	UG/L
1,2-DICHLOROETHANE	5.0	10 U	UG/L
1,1-DICHLOROETHENE	5.0	10 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
	5.0	10 U	UG/L
TRANS-1, 2-DICHLOROETHENE	5.0	10 U	UG/L
1,2-DICHLOROPROPANE	5.0	10 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
ETHYLBENZENE	5.0	10 U	UG/L
2-HEXANONE	10	20 U	UG/L
METHYLENE CHLORIDE	5.0	10 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	20 U	UG/L
STYRENE	5.0	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
TETRACHLOROETHENE	5.0	10 U	UG/L
TOLUENE	5.0	10 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	10	UG/L
1,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
TRICHLOROETHENE	5.0	380	UG/L
VINYL CHLORIDE	5.0	10 U	UG/L
O-XYLENE	5.0	10 U	UG/L
M+P-XYLENE	5.0	10 U	UG/L
SURROGATE RECOVERIES	QC LIMITS		
BROMOFLUOROBENZENE	(86 - 115 %)	104	%
TOLUENE-D8	(88 - 110 %)	102	96
DIBROMOFLUOROMETHANE	(86 - 118 %)	99	8

COLUMBIA ANALYTICAL SEI CES

VOLATILE ORGANICS

METHOD 8260B TCL Reported: 07/10/01

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received:	Order #: 476 Submission #:	5997	e M <mark>atrix:</mark> tical Run	
ANALYTE		PQL	RESULT	UNITS
	27/01			
ANALYTICAL DILUTION:	1.00			
ACETONE		20	20 U	UG/L
BENZENE		5.0	5.0 U	UG/L
BROMODICHLOROMETHANE		5.0	5.0 U	UG/L
BROMOFORM		5.0	5.0 U	UG/L
BROMOMETHANE		5.0	5.0 U	UG/L
2-BUTANONE (MEK)		10	10 U	UG/L
CARBON DISULFIDE		10	10 U	UG/L
CARBON TETRACHLORIDE		5.0	5.0 U	UG/L
CHLOROBENZENE		5.0	5.0 U	UG/L
CHLOROETHANE		5.0	5.0 U	UG/L
CHLOROFORM		5.0	5.0 U	UG/L
CHLOROMETHANE		5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE		5.0	5.0 U	UG/L
1-DICHLOROETHANE		5.0	5.0 U	UG/L
, 2-DICHLOROETHANE		5.0	5.0 U	UG/L
1,1-DICHLOROETHENE		5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE		5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE		5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE		5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE		5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE		5.0	5.0 U	UG/L
ETHYLBENZENE		5.0	5.0 U	UG/L
2-HEXANONE		10	10 U	UG/L
METHYLENE CHLORIDE		5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBI	(X)	10	10 U	UG/L
STYRENE		5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE		5.0	5.0 U	UG/L
TETRACHLOROETHENE		5.0	5.0 U	UG/L
TOLUENE		5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE		5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE TRICHLOROETHENE		5.0	5.0 U	UG/L
VINYL CHLORIDE		5.0	5.0 U	UG/L
O-XYLENE		5.0	5.0 U	UG/L
M+P-XYLENE		5.0	5.0 U 5.0 U	UG/L UG/L
SURROGATE RECOVERIES	QC LIMITS			
BROMOFLUOROBENZENE	(86 - 115	웅)	101	90
LUENE-D8	(88 - 110	웅)	103	%
DIBROMOFLUOROMETHANE	(86 - 118	8)	98	9



Columbia 1 Mustard St., Suite 250, Rochester, NY 14609-6925 (716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

An Employee-Owned Company															D	AIE_	6	16	-0/		PAGE)F +	
PROJECT NAME Griffin IRM															S RE	QUI	EST	ED							
company/address 30775 Bynbridge Pd												۵	Z	METALS, TOTAL (LIST BELOW)									PRES	SERVA	TION
						17	2		PESTICIDES/PCB's	A's	JA's	TCLP METALS UOA'S U/P	ATIC												
					RS	□ 95-1	95-2	N	36	0	SVC	S	RIZ		ED										
5	Solon	Ohio	_		NE			/60%	B's	ST.	52	LS	TOS		N I								1		
TEL (')		FAV (OF CONTAINERS	GC/MS VOA's	GC/MS SVOA's	601	S/PC 608	186	7 82 T T	SV	Col	NATA!	METALS, DISSOLVED (LIST BELOW)										
TEL (')	1.	- FAX ()		NO	Q D	180	S	E CE	LS.	[S]	N D	X-	50	00	0									
SAMPLER'S SIGNATUR	E Bob-	Takes			Ö	4S V	10 20	SOA	10 E	TAL	TAI	A'S	act act	ALS.	NLS.	7							2.0	12	,
			FOR OFFICE USE ONLY	SAMPLE	9	CAN	CA 82	20 80 80	ES1	TAF	A P	25	IAS I	ET	ET	8							V	Λ	Other
SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	#	0	Q	Q	₽ □	S	S	FO	30	ΣΞ	ΣS	7							PH	F	0
EFF-6-16-01	6-16-01	10:05		WHITER	2																	4			
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Bob Pater	3Y:		RECEIVED						1	Routine														et e e	
Sighalure 3.6 Pabien		Signature	WIN I		2. Routine Rep. w/C													Shippin	ng Via:						
Printed Name URS		Printed Name	ie CAR		_ Standard (10-15 working days) Narrative Bill To: Shio								Shipping #:												
Firm 6-11-01 10:	135	Firm	6/16/hi	Prov	vide Ver	rbal Prelin	minary F	Results			able Pack	kage								Tempera	-	11	/		
Date/Time	-0	Date/Time	11.40 10.	_ Pro	vide FA	X Prelimi	nary Re	sults	4.1	N.J. Rec	duced			_								0	1		
RELINQUISHED E	BY:		RECEIVED BY:	Reques	sted Rec	port Date					ables Lev		lan							Submis	sion No:	12	47	137	3
											IY ASP/CLP Deliverables lite specific QC.									- Committee					
Signature		Signature		CDE	CIAL	MOTE	LICTI	CNE																	
Printed Name		Printed Name	8	- SPEC	JIAL	INSTR	DC III	JNS/C	OWINI	ENIS															
Firm Date/Time		Firm Date/Time		META	ALS																				
		Date/Time		OBG	ANIC	g. []	TCI	ПР	DI F	JAF	Only	□ B	N Onl		Specia	al Liet									
RELINQUISHED E	3Y:	1	RECEIVED BY:	Ond	Altio	3	TOL	ا السا	- L	1 75	Jiny		V City		Sheria	List									
CSignature		Signature																							
Printed Name		Printed Name	IB .																						
Firm		Firm											7												
Date/Time Date/Time																									

olumbia Analytical Services Inc. Cooler Receipt And Preservation Check Form

Were custoo	dy seals on outside dy papers properly ses arrive in good co	of cool	er? ut (ink,	signed, etc.)?	YI	DEX CD&L CLES NO ES NO
Were Ice or Where did the	A vials have signifi- Ice packs present are bottles originate of cooler(s) upon	?		es?	Y	ES NO N/A ES NO AS/ROC, CLIENT
Is the temperat	ture within 0° - 6° C?:			Yes D Yes D	Yes 🗆	Yes 🗆 Yes 🗆
If No, Explain				No D No D	No 🗆	No D No D
	emperatures Take		/	/	1040	
Thermomete	er ID:	T	emp B	lank Sample Bo	ottle Cooler	Temp: IR. Gun
out of Temperature	, Client Approval to	Run Sa	ımples			
Were correct Air Samples	e labels and tags ag t containers used for Cassettes / Tub	or the to	ests inc	dicated?		YES NO YES NO YES NO ® Bags Inflated
Were correct	t containers used for Cassettes / Tub	or the to	ests inc	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated
Were correct Air Samples	t containers used for Cassettes / Tub	or the to	ests inc	dicated?		YES NO YES NO
Were correct Air Samples Explain any discrepa	t containers used for Cassettes / Tub	or the to	ests inc	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated
Were correct Air Samples: explain any discrepa	t containers used for Cassettes / Tub ncies:	or the to	ests inc	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated
Were correct Air Samples: explain any discrepa	t containers used for Cassettes / Tub Incies: Reagent NaOH	or the to	ests inc	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated
Were correct Air Samples: xplain any discrepa pH 12	containers used for Cassettes / Tub ncies: Reagent NaOH HNO ₃	or the to	ests inc	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated
Were correct Air Samples: xplain any discrepa pH 12 2	containers used for Cassettes / Tub cassettes	or the to	ests inc	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated
Were correct Air Samples: xplain any discrepa pH 12 2 2 Residual Chlorine (+/-)	Reagent NaOH HNO3 H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam	YES Ples were	NO NO	licated? Canisters Pressuri	zed Tedlar	YES NO YES NO ® Bags Inflated Vol. Added
PH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK F pH adjustment is required.	Reagent NaOH HNO3 H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam	YES Ples were	NO NO	licated? Canisters Pressuri Sample LD.	zed Tedlar Reagent	YES NO YES NO ® Bags Inflated Vol. Added
PH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK F pH adjustment is required.	Reagent NaOH HNO3 H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H CC Vial pH Verification Tested after Analysis) Following Samples	YES Ples were	NO NO	licated? Canisters Pressuri Sample LD.	zed Tedlar Reagent	YES NO YES NO ® Bags Inflated Vol. Added



A FULL SERVICE ENVIRONMENTAL LABORATORY

August 1, 2001

Mr. Ken Armstrong URS Corporation 623 West St. Clair Ave Cleveland, OH 44143

PROJECT:GRIFFIN IRM Submission #:R2107762

Dear Mr. Armstrong

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Val gardner for Mark Wilson

Client Service Manager

Enc.



1 Mustard ST. Suite 250 Rochester, NY 14609

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : URS Corporation

Project Reference: GRIFFIN IRM

Lab Submission # : R2107762
Reported : 08/01/01

Report Contains a total of ____ pages

The results reported herein relate only to the samples received by the laboratory. This report may not be reproduced except in full, without the approval of Columbia Analytical Services.

This package has been reviewed by Columbia Analytical Services' QA

Department/Laboratory Director to comply with NELAC standards prior
to report submittal.



CASE NARRATIVE

This report contains analytical results for the following samples: Submission #: R2107762

Lab ID 479044

Client ID

EFF-7-16-01

All samples were received in good condition.

All samples have been analyzed by the approved methods cited on the analytical results pages.

11 holding times and associated QC were within limits.

No analytical or QC problems were encountered.

COLUMBIA ANALYTICAL SERVICES

VOLATILF RGANICS
METHOD 8200B TCL
Reported: 08/01/01

URS Corporation

Project Reference: GRIFFIN IRM Client Sample ID: EFF-7-16-01

Date Sampled: 07/16/01 Order #: 479044 Sample Matrix: WATER Date Received: 07/16/01 Submission #: R2107762 Analytical Run 67268

ANALYTE	DOI	DECIT	IBITEC
MADITO	PQL	RESULT	UNITS
DATE ANALYZED : 07/30			
ANALYTICAL DILUTION:	2.00		
ACETONE	20	40 U	UG/L
BENZENE	5.0	10 U	UG/L
BROMODICHLOROMETHANE	5.0	10 U	UG/L
BROMOFORM	5.0	10 U	UG/L
BROMOMETHANE	5.0	10 U	UG/L
2-BUTANONE (MEK)	10	20 U	UG/L
CARBON DISULFIDE	10	20 U	
CARBON TETRACHLORIDE	5.0		UG/L
CHLOROBENZENE	5.0	10 U 10 U	UG/L
CHLOROETHANE	5.0		UG/L
CHLOROFORM	5.0	10 U	UG/L
CHLOROMETHANE		10 U	UG/L
DIBROMOCHLOROMETHANE	5.0	10 U	UG/L
L,1-DICHLOROETHANE	5.0	10 U	UG/L
L, 2-DICHLOROETHANE	5.0	10 U	UG/L
1,2-DICHLOROETHENE	5.0	10 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
	5.0	10 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
L, 2-DICHLOROPROPANE	5.0	10 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
ETHYLBENZENE	5.0	10 U	UG/L
2-HEXANONE	10	20 U	UG/L
ETHYLENE CHLORIDE	5.0	10 U	UG/L
-METHYL-2-PENTANONE (MIBK)	10	20 U	UG/L
STYRENE	5.0	10 U	UG/L
,1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
TETRACHLOROETHENE	5.0	10 U	UG/L
COLUENE	5.0	10 U	UG/L
,1,1-TRICHLOROETHANE	5.0	10 U	UG/L
,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
RICHLOROETHENE	5.0	340	UG/L
INYL CHLORIDE	5.0	10 U	UG/L
)-XYLENE	5.0	10 U	UG/L
M+P-XYLENE	5.0	10 U	UG/L
SURROGATE RECOVERIES	QC LIMITS		
-BROMOFLUOROBENZENE	(87 - 111 %)	98	9
OLUENE-D8	(87 - 108 %)	96	8
IBROMOFLUOROMETHANE	(86 - 117 %)	99	90

COLUMBIA ANALYTICAL SERVICES

VOLATILE RGANICS METHOD 8400B TCL Reported: 08/01/01

Project Reference:

Client Sample ID : METHOD BLANK

Date Sampled : Order #: 482676 Sample Matrix: WATER Date Received: Submission #: Analytical Run 67268 ANALYTE POL RESULT UNITS DATE ANALYZED : 07/30/01 ANALYTICAL DILUTION: 1.00 ACETONE 20 20 U UG/L BENZENE 5.0 5.0 U UG/L BROMODICHLOROMETHANE 5.0 5.0 U UG/L BROMOFORM 5.0 5.0 U UG/L BROMOMETHANE 5.0 5.0 U UG/L 2-BUTANONE (MEK) 10 10 U UG/L CARBON DISULFIDE 10 10 U UG/L CARBON TETRACHLORIDE 5.0 5.0 U UG/L CHLOROBENZENE 5.0 5.0 U UG/L CHLOROETHANE 5.0 5.0 U UG/L CHLOROFORM 5.0 5.0 U UG/L CHLOROMETHANE 5.0 5.0 U UG/L DIBROMOCHLOROMETHANE 5.0 5.0 U UG/L 1,1-DICHLOROETHANE 5.0 5.0 U UG/L 1,2-DICHLOROETHANE 5.0 5.0 U UG/L . 1-DICHLOROETHENE 5.0 5.0 U UG/L CIS-1,2-DICHLOROETHENE 5.0 5.0 U UG/L TRANS-1, 2-DICHLOROETHENE 5.0 5.0 U UG/L 1,2-DICHLOROPROPANE 5.0 5.0 U UG/L CIS-1,3-DICHLOROPROPENE 5.0 5.0 U UG/L TRANS-1,3-DICHLOROPROPENE 5.0 5.0 U UG/L ETHYLBENZENE 5.0 5.0 U UG/L 2-HEXANONE 10 10 U UG/L METHYLENE CHLORIDE 5.0 5.0 U UG/L 4-METHYL-2-PENTANONE (MIBK) 10 10 U UG/L STYRENE 5.0 5.0 U UG/L 1,1,2,2-TETRACHLOROETHANE 5.0 5.0 U UG/L TETRACHLOROETHENE 5.0 5.0 U UG/L TOLUENE 5.0 5.0 U UG/L 1,1,1-TRICHLOROETHANE 5.0 5.0 U UG/L 1,1,2-TRICHLOROETHANE 5.0 5.0 U UG/L TRICHLOROETHENE 5.0 5.0 U UG/L VINYL CHLORIDE 5.0 5.0 U UG/L O-XYLENE 5.0 5.0 U UG/L M+P-XYLENE 5.0 5.0 U UG/L SURROGATE RECOVERIES QC LIMITS 4-BROMOFLUOROBENZENE (87 111 %) 98 00 TOLUENE - D8 (87 108 %) 97 2 IBROMOFLUOROMETHANE

(86

117 %)

98



Mustard St., Suite 250, Rochester, NY 14609-69245

(716) 288-5380 • FAX (716) 288-8475

CHAIN	CUSTODY/LABORATORY	ANALYSIS	REC	ST	FORM

An Employee Owned Company															D	ATE _	(16	0		PAG	E		OF_L	
PROJECT NAME Griffin IRM															RE	QU	EST	ED							
PROJECT MANAGER/CONTACT Ken Armstrong							2		6	w	A's	H/P	TION Ignit.				-						PRE	SERVA	TIOI
Cleveland, Ohio 44113 TEL (216) 622-2400 FAX (216) 241-9083					CONTAINERS	GC/MS VOA's	SVOA's	GC VOA's	PESTICIDES/PCB's	LIST 8021 VOA	LIST 8270 SVO.	METALS DI SVOA'S	CHARACTERIZA Corros.	. TOTAL LOW)	METALS, DISSOLVED (LIST BELOW)	40									
SAMPLER'S SIGNATURE	Bot	- tab			OF C	/MS \	3270	VOA 3021	STICI 3081	AR'S I	AR'S I	LP (VA's	STE (TALS ST BE	TALS ST BE	32							< 2.0	> 12	Other
SAMPLE I.D.	DATE		FOR OFFICE USE ONLY LAB 1.D.	SAMPLE MATRIX	#		80	90	<u> </u>	ST	ST	20	30	E R	E.E.								H	A	ot
EFF-7-16-01	7-16-01	11:55	47 9044	WATER	2							11				X						. 1			†
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Signature Printed Name Printed Name Signature Printed Name Printed Name Prove P			hr ndard (1 vide Ver	48 hr. 48 hr. 10-15 wo rbal Prelim	5 orking da iminary f	day ys) Results		Routine Routine Narrative EPA Lev Validatai N.J. Rec	Rep. w/ e /el III ble Pack duced	CASE	VTS	P.O. # Bill To:		CE INF	ORMA	TION:		Shippin	ng Via: _	Cli 118	ent	State from the state of the sta	elista en con con di		
RELINOUISHED BY Falcen Signature Bol Fabra, Printed Name URS	Y: /	-	RECEIVED BY:	Reques	sted Rep	oort Date			5.	NY ASP	bles Lev CLP Decific QC	eliverabl	es		-					Submis	ssion No	720	11	76	2
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Columbia Analytical Services Inc. oler Receipt And Preservation Check . . m

Project/Client	URS			S	ubmission Numb	er_R2_7762
ooler received on	7/16/01 by:	3	4	COURIER: CA	AS UPS FEI	DEX CD&L CLIEN
	ody seals on outside	o of an				
2. Were custo	ody papers properly	filed	over Gel			ES (NO)
B. Did all bott	les arrive in good	condition	out (III	c, signed, etc.)?		ES NO
Did any V(OA vials have signi	ficant o	ir bubb	dec?		ES) NO
5. Were Ice o	r Ice packs presen	19	u ouot	ila:		ES NO N/A
. Where did	the bottles originat	e?				SNO -
7. Temperatur	re of cooler(s) upor	п гесеі <u>і</u>	ot:	110	CI	LS/ROC, CLIENT
Is the tempera	ature within 0° - 6° C?):		Yes 🗆 Yes 🛭	Yes 🗆	Yes D Yes D
If No, Expla	in Below			No, EC No E		No D No D
Date/Time	Temperatures Take	en:	7	110/21		12:30
Thermomet	er ID: IRbun		Temp I	Blank Sample B		emp. IR. Gun
				•		
f out of Temperatur	e, Client Approval t	o Run S	Sample	Temp	Ok L	thr Rule
Cooler Breakdown:	Date: 7-1	6-01		by:	DE	
. Were all bot	ttle labels complete	(i.e. 81	nalvsis	preservation etc		ES NO
. Did all bottl	e labels and tags ag	ree wi	th custo	odv naners?		ES NO
. Were correct	t containers used f	or the t	ests in	dicated?		ES NO
Air Samples	: Cassettes / Tub	sec Into		Canisters Pressur		
xplain any discrepa	incies.	MILL CO.		Camsaca's Pressur	rzed : Tedlar(B Bags Inflated N/A
		YES	NO	Sample I.D.	Reagent	Vol. Added
pН	Reagent					
· 12	NaOH					
2	HNO ₃					
2	H ₂ SO ₄					y .
Residual Chlorine (+/-)	for TCN & Phenol					
5-9*	P/PCBs (608 only)					
S = All samples OK	NO = Sam	ples were	preserv	ed at labas listed	PC OK to adjus	Hq
pH adjustment is requi	red, use NaOH and/or H	1,504				
VO	C Vial pH Verification	115	ohi			
	Ecilousing S-	DM 3	1/2	1 1 1		
	red, use NaOH and/or H C Vial pH Verification Tested after Analysis) Following Samples Exhibited pH > 2	0.	H	8/1/01		
	- Indiana para 2	n'		O) O()		
				U		
					-	
ther Comments:						



A FULL SERVICE ENVIRONMENTAL LABORATORY

August 28, 2001

Mr. Ken Armstrong URS Corporation 623 West St. Clair Ave Cleveland, OH 44143

PROJECT:GRIFFIN IRM Submission #:R2108179

Dear Mr. Armstrong

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



1 Mustard ST. Suite 250 Rochester, NY 14609

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : URS Corporation

Project Reference: GRIFFIN IRM

Lab Submission # : R2108179 Reported : 08/28/01

Report Contains a total of ______ pages

The results reported herein relate only to the samples received by the laboratory. This report may not be reproduced except in full, without the approval of Columbia Analytical Services.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director to comply with NELAC standards prior to report submittal.



CASE NARRATIVE

This report contains analytical results for the following samples:

Submission #: R2108179

Lab ID

486365

Client ID

EFF-8-15-01

All samples were received in good condition.

All samples have been analyzed by the approved methods cited on the analytical results pages.

All holding times and associated QC were within limits.

No analytical or QC problems were encountered.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits.
 (Flag the entire batch Inorganic analysis only)
- * Duplicate analysis not within control limits.

 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145

CT ID # in Rochester: PH0556

MA ID # in Rochester: PH0556

M-NY032

AIHA # in Rochester: 7889

NH ID # in Rochester: 294198-A

COLUMBIA ANALYTICAL SI ICES

VOLATILE ORGANICS METHOD 8260B TCL Reported: 08/28/01

URS Corporation

Project Reference: GRIFFIN IRM Client Sample ID: EFF-8-15-01

Date Sampled: 08/15/01 10:15 Order #: 486365 Sample Matrix: WATER Date Received: 08/15/01 Submission #: R2108179 Analytical Run 68364

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 08/25/0	11		
ANALITICAL DILUTION:	2.00		
ACETONE	20	40 U	UG/L
BENZENE	5.0	10 U	UG/L
BROMODICHLOROMETHANE	5.0	10 U	UG/L
BROMOFORM	5.0	10 U	UG/L
BROMOMETHANE	5.0	10 U	UG/L
2-BUTANONE (MEK)	10	20 U	UG/L
CARBON DISULFIDE	10	20 U	UG/L
CARBON TETRACHLORIDE	5.0	10 U	UG/L
CHLOROBENZENE	5.0	10 U	UG/L
CHLOROETHANE	5.0	10 U	UG/L
CHLOROFORM	5.0		
CHLOROMETHANE		10 U	UG/L
	5.0	10 U	UG/L
IBROMOCHLOROMETHANE	5.0	10 U	UG/L
, 1-DICHLOROETHANE	5.0	10 U	UG/L
, 2-DICHLOROETHANE	5.0	10 U	UG/L
,1-DICHLOROETHENE	5.0	10 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
, 2-DICHLOROPROPANE	5.0	10 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
ETHYLBENZENE	5.0	10 U	UG/L
2-HEXANONE	10	20 U	UG/L
ETHYLENE CHLORIDE	5.0	10 U	UG/L
-METHYL-2-PENTANONE (MIBK)	10	20 U	UG/L
STYRENE	5.0	10 U	UG/L
,1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
TETRACHLOROETHENE	5.0	10 U	UG/L
COLUENE	5.0	10 U	UG/L
,1,1-TRICHLOROETHANE	5.0	10 U	UG/L
,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
TRICHLOROETHENE	5.0	360	UG/L
VINYL CHLORIDE	5.0	10 U	UG/L
)-XYLENE	5.0	10 U	UG/L
M+P-XYLENE	5.0	10 U	UG/L
SURROGATE RECOVERIES	QC LIMITS		
-BROMOFLUOROBENZENE	(87 - 111 %)	103	of the second
COLUENE-D8	(87 - 108 %)	100	8
DIBROMOFLUOROMETHANE	(86 - 117 %)	98	8

COLUMBIA ANALYTICAL S TICES

VOLATILE ORGANICS

METHOD 8260B TCL Reported: 08/28/01

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received: S	Order #: 488830 ubmission #:	Sample Matrix: Analytical Run	
ANALYTE	PQL	RESULT	UNITS
	5/01		
ANALYTICAL DILUTION:	1.00		
ACETONE	20	20 U	UG/L
BENZENE	5.0		UG/L
BROMODICHLOROMETHANE	5.0		UG/L
BROMOFORM	5.0		UG/L
BROMOMETHANE	5.0		UG/L
2-BUTANONE (MEK)	10		UG/L
CARBON DISULFIDE	10		UG/L
CARBON TETRACHLORIDE	5.0		UG/L
CHLOROBENZENE	5.0		UG/L
CHLOROETHANE	5.0		UG/L
CHLOROFORM	5.0		UG/L
CHLOROMETHANE	5.0		UG/L
DIBROMOCHLOROMETHANE	5.0		UG/L
,1-DICHLOROETHANE	5.0		UG/L
,2-DICHLOROETHANE	5.0		UG/L
1,1-DICHLOROETHENE	5.0		UG/L
CIS-1,2-DICHLOROETHENE	5.0		UG/L
TRANS-1,2-DICHLOROETHENE	5.0		UG/L
1,2-DICHLOROPROPANE	5.0		UG/L
CIS-1,3-DICHLOROPROPENE	5.0		UG/L
TRANS-1,3-DICHLOROPROPENE	5.0		UG/L
ETHYLBENZENE	5.0		UG/L
2-HEXANONE	10		UG/L
METHYLENE CHLORIDE	5.0		UG/L
4-METHYL-2-PENTANONE (MIBK)			UG/L
STYRENE	5.0		UG/L
1,1,2,2-TETRACHLOROETHANE	5.0		UG/L
TETRACHLOROETHENE	5.0		UG/L
TOLUENE	5.0		UG/L
1,1,1-TRICHLOROETHANE	5.0		UG/L
1,1,2-TRICHLOROETHANE	5.0		UG/L
TRICHLOROETHENE	5.0		UG/L
/INYL CHLORIDE	5.0		UG/L
O-XYLENE	5.0		UG/L
M+P-XYLENE	5.0		UG/L
SURROGATE RECOVERIES	QC LIMITS		
-BROMOFLUOROBENZENE	(87 - 111 %)	100	8
OLUENE-D8	(87 - 108 %)	101	96
DIBROMOFLUOROMETHANE	(86 - 117 %)	- 99	8



Mustard St., Suite 250, Rochester, NY 14609-69245 (716) 288-5380 • FAX (716) 288-8475

CHAIN CUSTODY/LABORATORY ANAL	YSIS REQUEST FORM
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An Employon-Owned Company															D	ATE		8-1.	5-0	1	PAGI	Ε	1	OF	
PROJECT NAME	Sriffin	I	em				1								RE		EST	ED							
PROJECT MANAGER/C	CONTACT_	Ken	Armstrong								1,0	Q.	N =										PRE!	SERVA	ATION
COMPANY/ADDRESS	KS 634	5+.	Clair		RS	95-1	□ 95-2		s □ 95-3	VOA's	SVOA's	S	RIZATI(ì	ED										
TEL (2/6) 622-2 SAMPLER'S SIGNATUR	400	FAX (2	hio 44 14 241-9 abien	1083	CONTAINERS	GC/MS VOA's		1 0	PESTICIDES/PCB's	STAR'S LIST 8021 VOA'S	S LIST 8270	□ METALS	CHARACTE	S, TOTAL SELOW)	METALS, DISSOLVED (LIST BELOW)	113							2.0	2	
SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY	SAMPLE MATRIX	# OF	GC/M:	GC/M	GC VC	PESTI 808	STAR.	STAR.	TCLP VOV	WASTE	METAI (LIST	METAL	168							pH < 2	pH > 12	Other
EFF-8-15-01	8-15-01	10:15	LAB I.D.	WATER	2	-										X						,	1.1		-
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Date/Time	n 11:05	Signature Printed Name Firm Date/Time	8/15/07 11	Star	ndard (1 vide Ver	48 hr. 0-15 wo bal Preli C Prelimi	5 rking da minary f	day ys) Results	123	Routine Routine Narrative EPA Lev Validatal N.J. Rec Delivera	Report Rep. w/ e el III ble Pack luced	CASE	VTS	P.O. #:	INVOIC			FION:		Shippin	ng Via: _	Chi	receip ient	Arriament .	1
RELINQUISHED B	Υ:		RÉCEIVED BY:	Request	ted Rep	ort Date			5.1	NY ASP	CLP De	eliverable	es							Submis	sion No:	14	4	11	(
Signature Printed Name		Signature Printed Name	A .	SPEC	CIALI	NSTR	UCTIO	ONS/C	OMMI							arter remarks e									
Firm		Firm		META																					
Date/Time RELINQUISHED B	Y:	Date/Time	RECEIVED BY:	ORG	ANICS	S: 🗆	TCL	□ PF	PL [AE (Only	□ BN	V Only		Specia	List									
O pature		Signature																							
Printed Name		Printed Name	9																						
Firm		Firm																							
Date/Time		Date/Time	· · · · · · · · · · · · · · · · · · ·																						

Columbia Analytical Services Inc. cooler Receipt And Preservation Check Form

<u> </u>	WCCH	-	1		Subn	nission Numl	per_K	1-8	179
Cooler received on_	8/5/01 by:_	M	5	COURIER		UPS FE			
. Were custo	ly seals on outside	of cool	er?			V	ES/N		
	ly papers properly			signed etc	c.)?		ES NO		
. Did all bottle	es arrive in good co	ondition	(unbi	roken)?		/	ES NO		
Did any VO.	A vials have signifi	icant air	bubbl	es?		Y	ES NO	DN/A	
	Ice packs present						ES NO		
	ne bottles originate e of cooler(s) upon			11		E	AS/RO	C; CL	IENT
	ure within 0° - 6° C?:	_		Ver D	V D				
If No, Explain				Yes 🗆	Yes 🗆	Yes 🗆		s 🗆	Yes 🗆
	emperatures Take	: m'	4	8/15/21	No 🗆	No D	No		No 🗆
	er D: IR-6um			1./01					
Thermomete	ID. LR-bum	1	emp B	slank Sar	nple Bott	tle Cooler	Temp.(IR.	Gun
out of Temperature	, Client Approval to	Run Sa	amples						
Cooler Breakdown:	Date: 8-10	2-0			bv:	ME			
	tle labels complete			preservation	n etc. 12	100	YES)N	10	
. Did all bottle	labels and tags ag	ree with	n custo	dv papers?	in, etc.)		YESN	. ,	
Wara come	10			-J Papero.					
Were correct	t containers used for	or the te	ests inc	dicated?					
Air Samples:						d Tedla	YESN	O	rd N/A
Air Samples:	Cassettes / Tub			licated? Canisters P		d Tedla		O	ed N/A
Air Samples:	Cassettes / Tub				ressurize		YESN	O	
Air Samples:	Cassettes / Tub	es Intac	t	Canisters P	ressurize	d Tedlar Reagent	YESN	O s Inflate	
Air Samples: explain any discrepa	Cassettes / Tub	es Intac	t	Canisters P	ressurize		YESN	O s Inflate	
Air Samples: xplain any discrepa	Cassettes / Tub	es Intac	t	Canisters P	ressurize		YESN	O s Inflate	
Air Samples: xplain any discrepa pH	Cassettes / Tub ncies: Reagent NaOH	es Intac	t	Canisters P	ressurize		YESN	O s Inflate	
pH 12 2	Cassettes / Tub ncies: Reagent NaOH HNO ₃ H ₂ SO ₄	es Intac	t	Canisters P	ressurize		YESN	O s Inflate	
pH 12 2	Cassettes / Tub ncies: Reagent NaOH HNO3 H ₂ SO ₄ for TCN & Phenol	es Intac	t	Canisters P	ressurize		YESN	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK	Cassettes / Tub ncies: Reagent NaOH HNO3 H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9*	Cassettes / Tub ncies: Reagent NaOH HNO3 H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam	YES Ples were	NO	Canisters P	ressurize		YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is require	Cassettes / Tub ncies: Reagent NaOH HNO3 H2SO4 for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is requir	Cassettes / Tub ncies: Reagent NaOH HNO ₃ H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification Tested after Analysis)	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is requir	Cassettes / Tub ncies: Reagent NaOH HNO3 H2SO4 for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is requir	Cassettes / Tub ncies: Reagent NaOH HNO ₃ H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification Tested after Analysis) Following Samples	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is requir	Cassettes / Tub ncies: Reagent NaOH HNO ₃ H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification Tested after Analysis) Following Samples	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is requir	Cassettes / Tub ncies: Reagent NaOH HNO ₃ H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification Tested after Analysis) Following Samples	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	
pH 12 2 Residual Chlorine (+/-) 5-9* ES = All samples OK f pH adjustment is requir	Cassettes / Tub ncies: Reagent NaOH HNO ₃ H ₂ SO ₄ for TCN & Phenol P/PCBs (608 only) NO = Sam red, use NaOH and/or H C Vial pH Verification Tested after Analysis) Following Samples	YES Ples were	NO	Canisters P Sample I.D	ressurize	Reagent	YES N r® Bags	O s Inflate	



A FULL SERVICE ENVIRONMENTAL LABORATORY

October 10, 2001

Mr. Ken Armstrong URS Corporation 623 West St. Clair Ave Cleveland, OH 44143

PROJECT: GRIFFIN IRM 3806E06191.03

Submission #:R2108565

Dear Mr. Armstrong

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark/Wilson

Client Service Manager

Enc.



1 Mustard ST. Suite 250 Rochester, NY 14609

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : URS Corporation

Project Reference: GRIFFIN IRM 3806E06191.03

Lab Submission # : R2108565 Reported : 10/10/01

Report Contains a total of 17 pages

The results reported herein relate only to the samples received by the laboratory. This report may not be reproduced except in full, without the approval of Columbia Analytical Services.

This package has been reviewed by Columbia Analytical Services' QA Department/Laboratory Director to comply with NELAC standards prior to report submittal.

CASE NARRATIVE



COMPANY: URS Greiner WCC Griffin IRM SUBMISSION #: R2108565

URS water samples were collected on 09/13/01 and received at CAS on 09/13/01 in good condition. See the CLP Batching Form for sample ID cross references.

VOLATILE ORGANICS

Water samples were analyzed for the Target Compound List (TCL) of Volatile Organics by Method 95-1 from the NYSASP 1995.

Sample MW-6D was analyzed for site specific QC. All matrix spike recoveries were within QC limits. All RPD were within limits.

All initial and continuing calibrations were compliant.

All blank spike recoveries were within QC limits.

All surrogate standard recoveries were within QC limits.

All Internal standard areas were within QC limits.

All samples were analyzed within the required holding times.

No additional analytical or QC problems were encountered with these analyses.

CAS ASP/CLP BATCHI FORM / LOGIN SHEET

SDG #: MW-		BATCH	COMPLETE:yes		DATE REV	/ISFD:		
SUBMISSIO		DISKETT	E REQUESTED: Y N_x		DATE DUE			
CLIENT:	URS Corporation	DATE: 09	/13/01		PROTOCO			
	: Mark Wilson	CUSTOD	Y SEAL: PRESENT/ABSENT:		SHIPPING			
	GRIFFIN IRM 3806E06191.03		F CUSTODY: PRESENT/ABSEN	T.	011111111111111111111111111111111111111	140		
CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE	DATE	На	%	REMARKS
								AMPLE CONDIT
492822	MW-1	WATER	95-1	9/13/01	9/13/01	(SOLIDS)	SOLIDS	AWIFLE CONDIT
492823	MW-3	WATER	95-1	9/13/01	9/13/01			
492824	MW-5D	WATER	95-1	9/13/01				
492825	MW-6S	WATER	95-1	9/13/01	9/13/01			
492826	MW-6D	WATER	QC 95-1	9/13/01	9/13/01			
492827	MW-7S	WATER	95-1	9/13/01	9/13/01			
492828	TB-1-9-13-01	WATER	95-1	9/13/01	9/13/01			
492829	DUP	WATER	95-1	9/13/01	9/13/01			7.00
492830	MW-7D	WATER	95-1	9/13/01	9/13/01			
492831	MW-9S	WATER	95-1	9/13/01	9/13/01			
492832	MW-9D	WATER	95-1	9/13/01	9/13/01			
492833	MW-10S	WATER	95-1	9/13/01	9/13/01			
492834	MW-10D	WATER	95-1	9/13/01	9/13/01			
492835	MW-13D	WATER	95-1	9/13/01	9/13/01			
492836	MW-11D	WATER	95-1	9/13/01	9/13/01			
492837	RW-01	WATER	95-1	9/13/01	9/13/01			
492838	RW-03	WATER	95-1	9/13/01				-
492839	COOLER BLANK	WATER	95-1		9/13/01			4.
		TVATER	30-1	9/13/01	9/13/01			
4								
1								
\$								

ORGANIC QUALIFIERS

- U Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.
- N Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.
- P This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form I and flagged with a "P".
- C This flag applies to pesticide results where the identification has been confirmed by GC/MS.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.
- D This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and ALL concentration values reported on that Form I are flagged with the "D" flag.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- X As specified in Case Narrative.

10/95

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample	Laboratory Sample			al Require			
Code	Code	*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
MW-1	492822	X					
MW-3	492823	Х					
MW-5D	492824	Х					
MW-6S	492825	Х					
MW-6D	492826	Х					
MW-7S	492827	Х					
TB-1-9-13-01	492828	X					
DUP	492829	Х					
MW-7D	492830	Х					
MW-9S	492831	Х					
MW-9D	492832	X					
MW-10S	492833	X					
MW-10D	492834	Х					
MW-13D	492835	X					
MW-11D	492836	X					
RW-01	492837	X					
RW-03	492838	Х					
			3				
							-/
Check Appropriate							

^{*}Check Appropriate Boxes

NCF1

^{*}CLP, Non-CLP

^{*}HSL, Priority Pollutant

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SAMPLE PREPARATION AND ANALYSIS SUMMARY VOA ANALYSES

ABORATORY	MATRIX	DATE	DATE REC'D	LOW LEVEL	DATE
SAMPLE ID		COLLECTED	AT LAB	MED LEVEL	ANALYZE
492822	WATER	09/13/01	09/13/01	LOW	09/18/01
492823	WATER	09/13/01	09/13/01	LOW	09/18/01
492824	WATER	09/13/01	09/13/01	LOW	09/18/01
492825	WATER	09/13/01	09/13/01	LOW	09/18/01
492826	WATER	09/13/01	09/13/01	LOW	09/19/01
492827	WATER	09/13/01	09/13/01	LOW	09/19/01
492828	WATER	09/13/01	09/13/01	LOW	09/19/01
492829	WATER	09/13/01	09/13/01	LOW	09/19/01
492830	WATER	09/13/01	09/13/01	LOW	09/18/01
492831	WATER	09/13/01	09/13/01	LOW	09/19/01
492832	WATER	09/13/01	09/13/01	LOW	09/19/01
492833	WATER	09/13/01	09/13/01	LOW	09/19/01
492834	WATER	09/13/01	09/13/01	LOW	09/19/01
492835	WATER	09/13/01	09/13/01	LOW	09/19/01
492836	WATER	09/13/01	09/13/01	LOW	
492837	WATER	09/13/01	09/13/01	LOW	09/19/01
492838	WATER	09/13/01	09/13/01	LOW	09/19,20/0
			00/10/01	LOVV	09/20/01
					¥ .
-					-

NCF5 5/91

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY

ORGANIC ANALYSES

SAMPLE ID	MATRIX	ANALYTICAL	EXTRACTION	AUXILARY	DILCON
		PROTOCOL	METHOD	CLEAN UP	FACTOR
492822	WATER	95-1			1.0
492823	WATER	95-1			1.0
492824	WATER	95-1			1.0
492825	WATER	95-1			1.0
492826	WATER	95-1			1.0
492827	WATER	95-1			1.0
492828	WATER	95-1			1.0
492829	WATER	95-1			1.0
492830	WATER	95-1			1.0
492831	WATER	95-1	- 24		1.0
492832	WATER	95-1			1.0
492833	WATER	95-1			1.0
492834	WATER	95-1			1.0
492835	WATER	95-1			1.0
492836	WATER	95-1			1.0
492837	WATER	95-1			1.0, 2.5
492838	WATER	95-1			1.0, 2.3
-					1.0
					1_
		La L			
		-	1		
			-		
				-	

NCF2 9/89

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name:	CAS/ROCH			Contract:	wcc		MW-1	
Lab Code:	10145	Case No.:	R21-8565	SAS No).:	SDG No.	MW-1	

Matrix: (soil/water) WATER Lab Sample ID: 492822 1.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: H9643.D

Level: (low/med) LOW Date Received: 09/13/01

% Moisture: not dec.

Date Analyzed: 09/18/01

GC Column: RTX502. ID: 0.53 (mm)

Dilution Factor: 1.0

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS

	CONCENTRATIO	ON UNITS:	
CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U,
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U -
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: CAS/ROCH		Contract: WCC	MV	/-1
Lab Code: 10145	ase No.: R21-8565	SAS No.:	SDG No.: M	W-1
Matrix: (soil/water) WATER		Lab Sample	ID: 492822 1.0	
Sample wt/vol: 5.0	(g/ml) ML	Lab File ID:	H9643.D	
Level: (low/med) LOW		Date Receiv	red: 09/13/01	
% Moisture: not dec.		Date Analyz	ed: 09/18/01	
GC Column: RTX502. ID: 0	0.53 (mm)	Dilution Fac	tor. 1.0	
Soil Extract Volume	(uL)	Soil Aliquot	Volume:	(uL)
Number TICs found: 0		NCENTRATION UNI		
CAS NO. COMPO	DUND	RT	EST. CONC.	Q

1A **VOLATILE ORGANICS ANALYSIS DATA SHEET**

EPA SAMPLE NO.

Lab Name:	CAS/RO	DCH	•	Contract:	WCC	14144-2	
Lab Code:	10145	Cas	se No.: R21-856	SAS No	o.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER		Lal	b Sample ID:	492823 1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	Lal	b File ID:	H9644.D	
Level: (low/	med)	LOW		Da	te Received:	09/13/01	
% Moisture:	not dec.			Da	te Analyzed:	09/18/01	
GC Column:	RTX5	02. ID: 0.	53 (mm)	Dil	ution Factor:	1.0	
Soil Extract	Volume		_ (uL)	So	il Aliquot Vol	ume:	(uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	UJ
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	120	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	Us
95-47-6	o-Xylene	10	U.
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAME	OF	NO.
_ , ,	OL CIAIL		140

Lab Name: CAS/ROCH	Contract: WCC	MW-3
Lab Code: 10145 Case No.: R21-8565	SAS No.: SDG No.:	MW-1
Matrix: (soil/water) WATER	Lab Sample ID: 492823	1.0
Sample wt/vol: 5.0 (g/ml) ML	Lab File ID: H9644.D	
Level: (low/med) LOW	Date Received: 09/13/01	
% Moisture: not dec.	Date Analyzed: 09/18/01	
GC Column: RTX502. ID: 0.53 (mm)	Dilution Factor: 1.0	
Soil Extract Volume (uL)	Soil Aliquot Volume:	(uL)
	NCENTRATION UNITS: L or ug/Kg) UG/L	
CAS NO. COMPOUND	RT EST. CONC	2. Q

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name:	CAS/RC	OCH	6m-		Contract:	wcc	MAA-2D	
Lab Code:	10145		Case No.:	R21-8565	SAS No	.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER	3		Lal	Sample ID:	492824 1.0	
Sample wt/v	ol:	5.0	(g/ml)	ML	Lal	File ID:	H9645.D	
Level: (low/	med)	LOW			Da	te Received:	09/13/01	
% Moisture:	not dec.				Da	te Analyzed:	09/18/01	
GC Column:	RTX5	02. ID:	0.53 (n	nm)	Dil	ution Factor:	1.0	
Soil Extract	Volume		(uL)		So	il Aliquot Vol	ume:	(uL

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	UJ
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	120	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3		10	U
95-47-6	o-Xylene	10	U.
100-42-5	Styrene	10	U ~
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMP	LE NO.
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Lab Name:	CAS/RO	СН		Contract	: w	CC		MW-5D	
Lab Code:	10145	Ca	se No.: R21-8	565 SAS N	No.: _	S	DG No.:	MW-1	
Matrix: (soil/	water)	WATER		L	ab S	ample ID:	492824	1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	L	ab Fi	ile ID:	H9645.[)	
Level: (low/	med)	LOW			ate F	Received:	09/13/0	1	
% Moisture:	not dec.				Date A	Analyzed:	09/18/0	1	
GC Column:	RTX50	2. ID: 0.	53 (mm)		Dilutio	n Factor:	1.0		
Soil Extract	Volume _		_ (uL)	8	Soil A	liquot Volu	ıme:		(uL)
				CONCENTRA	ATIO	N UNITS:			
Number TIC	s found:	0	(ug/L or ug/K	g)	UG/L			
CAS NO.		COMPOL	JND		R	ES ES	ST. CON	c.	Q

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: CAS/ROCH

EPA SAMPLE NO.

Contract: WCC MW-6S

Lab Code:	10145	Case No.:	R21-8565	SAS No .:	SDG No.:	MW-1

Matrix: (soil/water) WATER Lab Sample ID: 492825 1.0

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: H9646.D

Level: (low/med) LOW Date Received: 09/13/01

% Moisture: not dec. Date Analyzed: 09/18/01

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/l	L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane		10	U
75-01-4	Vinyl chloride		10	U
74-83-9	Bromomethane		10	U
75-00-3	Chloroethane		10	U
75-69-4	Trichlorofluoromethane		10	U
67-64-1	Acetone	-	10	U
75-35-4	1,1-Dichloroethene		10	U
75-09-2	Methylene chloride		10	U
75-15-0	Carbon disulfide		10	U
156-60-5	trans-1,2-Dichloroethen	е	10	U
75-34-3	1,1-Dichloroethane		10	U
78-93-3	2-Butanone		10	U
156-59-2	cis-1,2-Dichloroethene		4	J
67-66-3	Chloroform		10	U
107-06-2	1,2-Dichloroethane		10	U
71-55-6	1,1,1-Trichloroethane		4	J
56-23-5	Carbon tetrachloride		10	U
71-43-2	Benzene		10	U
79-01-6	Trichloroethene		72	
78-87-5	1,2-Dichloropropane		10	U
75-27-4	Bromodichloromethane		10	U
10061-01-5	cis-1,3-Dichloropropene		10	U
10061-02-6	trans-1,3-Dichloroprope		10	U
79-00-5	1,1,2-Trichloroethane		10	U
124-48-1	Dibromochloromethane		10	U
75-25-2	Bromoform	-	10	U
108-10-1	4-Methyl-2-pentanone		10	U
108-88-3	Toluene		10	U
591-78-6	2-Hexanone		10	U
127-18-4	Tetrachloroethene		10	U
108-90-7	Chlorobenzene		10	U
100-41-4	Ethylbenzene		10	U
108-38-3/106-42-3	(m+p)Xylene		10	U.
95-47-6	o-Xylene		10	U
100-42-5	Styrene		10	U
79-34-5	1,1,2,2-Tetrachloroethai	ne	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMPLE	NO.
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Lab Name:	CAS/ROC	Н	Contract: WCC	MVV-63	
Lab Code:	10145	Case No.: R21-85	65 SAS No.:	SDG No.: MW-	1
Matrix: (soil/	water) <u>W</u>	ATER	Lab Sample II	0: 492825 1.0	130
Sample wt/v	ol: <u>5</u> .	0 (g/ml) ML	Lab File ID:	H9646.D	
Level: (low/	med) Lo	WC	Date Received	d: 09/13/01	
% Moisture:	not dec		Date Analyzed	1: 09/18/01	
GC Column:	RTX502.	ID: <u>0.53</u> (mm)	Dilution Factor	1.0	
Soil Extract	Volume	(uL)	Soil Aliquot Vo	olume:	(uL)
Number TIC	s found:		ONCENTRATION UNITS g/L or ug/Kg) UG/L	S:	
CAS NO.	0	COMPOUND	RT E	EST. CONC.	Q

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-6D Lab Name: CAS/ROCH Contract: WCC Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1 Lab Sample ID: 492826 1.0 Matrix: (soil/water) WATER Lab File ID: H9654.D Sample wt/vol: 5.0 (g/ml) ML Date Received: 09/13/01 LOW Level: (low/med) Date Analyzed: 09/19/01 % Moisture: not dec. GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Aliquot Volume: (uL) Soil Extract Volume (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	-3	
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	3	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	4	J
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	80	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U -
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3		10	U.
95-47-6	o-Xylene	10	U.
100-42-5	Styrene	10	U-
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EF	A	S	AN	1P	LE	NO)

Lab Name:	CÁS/RO	СН			Contract:	wcc		WM-eD	
Lab Code:	10145	Cas	e No.: R	21-8565	SAS N	o.:	SDG No.:	MW-1	
Matrix: (soil/	water)	WATER			La	ab Sample	ID: 492826	1.0	
Sample wt/v	ol:	5.0	(g/ml) N	1L	La	ab File ID:	H9654.	D	_
Level: (low/	med)	LOW			D	ate Receive	ed: 09/13/0)1	
% Moisture:	not dec.				D	ate Analyze	ed: 09/19/0)1	
GC Column:	RTX50	02. ID: 0.5	3 (mm	1)	D	ilution Fact	or: 1.0		
Soil Extract	Volume		_ (uL)		S	oil Aliquot	/olume:		(uL)
						TION UNIT	Aller Med		
Number TIC	s found:	0		(ug/	L or ug/Kg) <u>UG/I</u>			
CAS NO.		COMPOU	ND			RT	EST. CON	IC.	Q

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-75

Lab Name:	CAS/RC	OCH	-	Contract:	WCC	11111-73	
Lab Code:	10145	Ca	se No.: R21-8565	SAS No	o.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER		La	b Sample ID:	492827 1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	La	b File ID:	H9658.D	
Level: (low/	med)	LOW		Da	te Received:	09/13/01	
% Moisture:	not dec.			Da	te Analyzed:	09/19/01	
GC Column:	RTX5	02. ID: 0.	53 (mm)	Dil	ution Factor:	1.0	
Soil Extract	Volume		_ (uL)	So	il Aliquot Vol	ume:	(uL

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	UJ
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	4	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	190	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U.
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET EPA SAMPLE NO. TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	CAS/ROCH		Contract:	wcc	MW-7:	S
Lab Code:	10145	Case No.: R21-	8565 SAS N	o.:	SDG No.: MW-	-1
Matrix: (soil/	water) W/	TER	La	b Sample ID): <u>492827 1.0</u>	
Sample wt/v	ol: 5.0	(g/ml) ML	La	b File ID:	H9658.D	
Level: (low/	med) LO	w	Da	ate Received	d: 09/13/01	
% Moisture:	not dec.		Da	ate Analyzed	1: 09/19/01	
GC Column:	RTX502.	ID: 0.53 (mm)	Di	lution Factor	r. 1.0	
Soil Extract	Volume	(uL)	Sc	oil Aliquot Vo	olume:	(uL)
			CONCENTRA (ug/L or ug/Kg		S:	
Number TIC	s found:	0				
CAS NO.	C	OMPOUND		RT I	EST. CONC.	Q

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-1 9-13-01

Lab Name:	CAS/RC	CH	-	-	Contract:	WCC		
Lab Code:	10145		Case No.:	R21-8565	SAS No	.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER	2		Lai	Sample ID:	492828 1.0	
Sample wt/vo	ol:	5.0	(g/ml)	ML	Lai	File ID:	H9659.D	
Level: (low/r	ned)	LOW	_		Da	te Received:	09/13/01	
% Moisture:	not dec.	-			Da	te Analyzed:	09/19/01	
GC Column:	RTX50	02. ID:	0.53 (n	nm)	Dil	ution Factor:	1.0	
Soil Extract \	/olume		(uL)		So	il Aliquot Volu	ıme:	(uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	2	J
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Eenzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U .
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET EPA SAMPLE NO. TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	CAS/RO	СН		Contract:	wcc	TB-1 9-13	1-01
Lab Code:	10145	Cas	e No.: R21-85	65 SAS No	o.:	SDG No.: MW-	1
Matrix: (soil/v	vater)	WATER		La	b Sample	e ID: 492828 1.0	
Sample wt/vo	ol:	5.0	(g/ml) ML	La	b File ID:	H9659.D	
Level: (low/n	ned)	LOW		Da	ite Recei	ved: 09/13/01	
% Moisture: r	not dec.			Da	ite Analy	zed: 09/19/01	
GC Column:	RTX50	2. ID: 0.5	3 (mm)	Dil	ution Fac	ctor: 1.0	
Soil Extract V	/olume _		_ (uL)	So	il Aliquot	Volume:	(uL)
Number TICs	found:	0		ONCENTRA			
CAS NO.		COMPOU	ND		RT	EST. CONC.	Q

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name:	CAS/R	OCH -		Contract:	WCC	DUP	
Lab Code:	10145	Cas	se No.: R21-8565	SAS No	.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER		Lai	Sample ID:	492829 1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	La	b File ID:	H9660.D	
Level: (low/	med)	LOW		Da	te Received:	09/13/01	
% Moisture:	not dec.			Da	te Analyzed:	09/19/01	
GC Column:	RTX5	02. ID: 0.5	63 (mm)	Dil	ution Factor.	1.0	
Soil Extract	Volume		(uL)	So	il Aliquot Volu	ume:	(uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	-3-	-
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	110	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U.
79-34-5	1,1,2,2-Tetrachloroethane	10	U

10 UJ

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMP	LE NO
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Lab Name:	CAS/ROCH		Contract:	WCC	DUF	
Lab Code:	10145	Case No.: R21-8	3565 SAS No	o,:	SDG No.: MW	/-1
Matrix: (soil/wa	ater) WATE	R	La	b Sample	e ID: 492829 1.0	
Sample wt/vol	5.0	(g/ml) ML	La	b File ID:	H9660.D	
Level: (low/m	ed) LOW		Da	te Recei	ved: 09/13/01	
% Moisture: no	ot dec.		Da	te Analyz	zed: 09/19/01	<u> </u>
GC Column:	RTX502. ID:	0.53 (mm)	Di	lution Fac	otor: 1.0	
Soil Extract Vo	olume	(uL)	So	il Aliquot	Volume:	(uL)
Number TICs	found: 0		CONCENTRA (ug/L or ug/Kg)			
CAS NO.	сом	POUND		RT	EST. CONC.	Q

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

_ab Name:	CAS/ROCH	•	Contract:	WCC	MW-7D	,
_ab Code:	10145	Case No.: R21-8565	SAS No).:	SDG No.: MW-1	

 Matrix: (soil/water)
 WATER
 Lab Sample ID: 492830 1.0

 Sample wt/vol:
 5.0
 (g/ml) ML
 Lab File ID: H9647.D

Level: (low/med) LOW Date Received: 09/13/01

% Moisture: not dec. Date Analyzed: 09/18/01

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

	CONCENTRATION UNITS:					
CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L		2	
74-87-3	Chloromethane			10 1	J	
75-01-4	Vinyl chloride				J	
74-83-9	Bromomethane				J	
75-00-3	Chloroethane				J	
75-69-4	Trichlorofluoron	nethane			J	
67-64-1	Acetone				U	
75-35-4	1,1-Dichloroeth	ene			J	
75-09-2	Methylene chlor	ride			J	
75-15-0	Carbon disulfide				J	
156-60-5	trans-1,2-Dichlo	roethene			J	
75-34-3	1,1-Dichloroeth			10 L	J	
78-93-3	2-Butanone				J	
156-59-2	cis-1,2-Dichloro	ethene		14		
67-66-3	Chloroform			10 L	J	
107-06-2	1,2-Dichloroetha	1,2-Dichloroethane		10 L		
71-55-6	1,1,1-Trichloroe	1,1,1-Trichloroethane			J	
56-23-5	Carbon tetrachloride				J	
71-43-2	Benzene			10 (
79-01-6	Trichloroethene			50		
78-87-5	1,2-Dichloropro	1,2-Dichloropropane		10 L	J	
75-27-4		Bromodichloromethane		10 L		
10061-01-5	cis-1,3-Dichloro	cis-1,3-Dichloropropene		10 L		
10061-02-6		trans-1,3-Dichloropropene		10 L		
79-00-5	1,1,2-Trichloroe			10 L		
124-48-1	Dibromochloron	nethane		10 L		
75-25-2	Bromoform			10 L	J	
108-10-1	4-Methyl-2-pent	anone		10 L	_	
108-88-3	Toluene			10 L	-	
591-78-6	2-Hexanone			10 L	-	
127-18-4	Tetrachloroethe	ne		10 L	-	
108-90-7	Chlorobenzene			10 L	_	
100-41-4	Ethylbenzene			10 L		
108-38-3/106-42-3	(m+p)Xylene				Ja	
95-47-6	o-Xylene			10 L		
100-42-5	Styrene				J:	
79-34-5	1,1,2,2-Tetrachl	oroethane		10 L	-	

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: CAS/ROCH	Contract: WCC	MW-7D	
Lab Code: 10145 Case No.: R21-	8565 SAS No.: S	DG No.: MW-1	
Matrix: (soil/water) WATER	Lab Sample ID:	492830 1.0	
Sample wt/vol: 5.0 (g/ml) ML	Lab File ID:	H9647.D	
Level: (low/med) LOW	Date Received:	09/13/01	
% Moisture: not dec.	Date Analyzed:	09/18/01	
GC Column: RTX502. ID: 0.53 (mm)	Dilution Factor:	1.0	
Soil Extract Volume (uL)	Soil Aliquot Volu	me:	(uL)
Number TICs found: 0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		
CAS NO. COMPOUND	RT ES	T. CONC.	2

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9S Lab Name: CAS/ROCH Contract: WCC Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1 Matrix: (soil/water) WATER Lab Sample ID: 492831 1.0 Sample wt/vol: 5.0 (g/ml) ML Lab File ID: H9661.D Level: (low/med) LOW Date Received: 09/13/01 % Moisture: not dec. Date Analyzed: 09/19/01 GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Aliquot Volume: (uL) Soil Extract Volume (uL) **CONCENTRATION UNITS:** CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q 74-87-3 Chloromethane 10 U 75-01-4 Vinyl chloride 10 74-83-9 Bromomethane 10 75-00-3 Chloroethane 10 U 75-69-4 Trichlorofluoromethane 10 U 67-64-1 Acetone -3-10 UJ 75-35-4 1,1-Dichloroethene 10 U 75-09-2 Methylene chloride 10 U 75-15-0 Carbon disulfide 10 156-60-5 trans-1,2-Dichloroethene 10 75-34-3 1,1-Dichloroethane 10 78-93-3 2-Butanone 10 U 156-59-2 cis-1,2-Dichloroethene 10 U 67-66-3 Chloroform 10 U 107-06-2 1,2-Dichloroethane 10 U 71-55-6 1,1,1-Trichloroethane 10 U 56-23-5 Carbon tetrachloride 10 71-43-2 Benzene 10 U 79-01-6 Trichloroethene 10 U 78-87-5 1,2-Dichloropropane 10 U 75-27-4 Bromodichloromethane 10 U 10061-01-5 cis-1,3-Dichloropropene 10 U 10061-02-6 trans-1,3-Dichloropropene 10 79-00-5 1,1,2-Trichloroethane 10 U 124-48-1 Dibromochloromethane 10 U 75-25-2 Bromoform 10 U 108-10-1 4-Methyl-2-pentanone 10 U 108-88-3 Toluene 10 U 591-78-6 2-Hexanone 10 U

Tetrachloroethene

1,1,2,2-Tetrachloroethane

Chlorobenzene

Ethylbenzene

(m+p)Xylene

o-Xylene

Styrene

127-18-4

108-90-7

100-41-4

95-47-6

100-42-5

79-34-5

108-38-3/106-42-3

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1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: CAS/R	ОСН	Contract: WCC	MW-9S	
Lab Code: 10145	Case No.: R21-8565	SAS No.: S	DG No.: MW-1	
Matrix: (soil/water)	WATER	Lab Sample ID:	492831 1.0	
Sample wt/vol:	5.0 (g/ml) ML	Lab File ID:	H9661.D	
Level: (low/med)	LOW	Date Received:	09/13/01	
% Moisture: not dec.		Date Analyzed:	09/19/01	
GC Column: RTX5	02. ID: 0.53 (mm)	Dilution Factor:	1.0	
Soil Extract Volume	(uL)	Soil Aliquot Volu	ıme:	(uL)
Number TICs found:		NCENTRATION UNITS: L or ug/Kg) UG/L		
CAS NO.	COMPOUND	RT ES	ST. CONC	0

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-9D Lab Name: CAS/ROCH Contract: WCC Lab Sample ID: 492832 1.0 Matrix: (soil/water) WATER 5.0 (g/ml) ML Sample wt/vol: Lab File ID: H9662.D Level: (low/med) LOW Date Received: 09/13/01 % Moisture: not dec. Date Analyzed: 09/19/01 GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Extract Volume (uL) Soil Aliquot Volume:

CONCENTRATION UNITS:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	-3	_
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U-
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U -
124-48-1	Dibromochloromethane	10	U÷
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U a
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAN	/IPLE	NO.
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Lab Name:	CAS/ROCI	4		Contract:	wcc	MW-9	D
	10145		No.: R21-8			SDG No.: MW	-1
Matrix: (soil/v	water) V	ATER		La	b Sample ID	: 492832 1.0	
Sample wt/vo	ol: <u>5.</u>	0 (g/ml) ML	La	b File ID:	H9662.D	
Level: (low/r	ned) Lo	OW		Da	ate Received	: 09/13/01	
% Moisture:	not dec.			Da	ate Analyzed	09/19/01	
GC Column:	RTX502.	ID: 0.53	(mm)	Di	lution Factor	: 1.0	
Soil Extract \	/olume		(uL)	Sc	oil Aliquot Vo	lume:	(uL)
Number TICs	s found:	0		CONCENTRA (ug/L or ug/Kg		:	
CAS NO.		COMPOUN	D		RT E	ST. CONC.	Q

EPA SAMPLE NO.

MW-10S Lab Name: CAS/ROCH Contract: WCC Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1 Lab Sample ID: 492833 1.0 Matrix: (soil/water) WATER Sample wt/vol: 5.0 (g/ml) ML Lab File ID: H9663.D Date Received: 09/13/01 Level: (low/med) LOW % Moisture: not dec. Date Analyzed: 09/19/01 GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Extract Volume (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	UJ
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	6	J
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3		10	U.
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1.1.2.2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	CAS/ROCH		Contract: WCC		MVV-10	S
Lab Code:	10145	Case No.: R21-85	665 SAS No.:	SE	OG No.: MW-	-1
Matrix: (soil/	water) WA	TER	Lab Sampl	e ID:	492833 1.0	
Sample wt/v	/ol: <u>5.0</u>	(g/ml) ML	Lab File ID):	H9663.D	
Level: (low/	med) LOV	V	Date Rece	ived:	09/13/01	
% Moisture:	not dec.		Date Analy	zed:	09/19/01	
GC Column	: RTX502. I	D: 0.53 (mm)	Dilution Fa	ctor:	1.0	
Soil Extract	Volume	(uL)	Soil Aliquo	t Volu	me:	(uL)
Number TIC	es found:		CONCENTRATION UNug/L or ug/Kg) UG	NITS:	_	
CAS NO.	co	MPOUND	RT	ES	T. CONC.	Q

EPA SAMPLE NO.

MW-10D Lab Name: CAS/ROCH Contract: WCC Lab Sample ID: 492834 1.0 Matrix: (soil/water) WATER 5.0 Lab File ID: H9664.D Sample wt/vol: (g/ml) ML Date Received: 09/13/01 LOW Level: (low/med) Date Analyzed: 09/19/01 % Moisture: not dec. GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Extract Volume _____ (uL) Soil Aliquot Volume: (uL)

	CONCENTRATION UNITS:			
CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q	
74-87-3	Chloromethane	10	U	
75-01-4	Vinyl chloride	10	U	
74-83-9	Bromomethane	10	U	
75-00-3	Chloroethane	10	U	
75-69-4	Trichlorofluoromethane	10	U	
67-64-1	Acetone	10	UŢ	
75-35-4	1,1-Dichloroethene	10	U	
75-09-2	Methylene chloride	10	U	
75-15-0	Carbon disulfide	10	U	
156-60-5	trans-1,2-Dichloroethene	10	U	
75-34-3	1,1-Dichloroethane	10	U	
78-93-3	2-Butanone	10	U	
156-59-2	cis-1,2-Dichloroethene	10	U	
67-66-3	Chloroform	10	U	
107-06-2	1,2-Dichloroethane	10	U	
71-55-6	1,1,1-Trichloroethane	10	U	
56-23-5	Carbon tetrachloride	10	U	
71-43-2	Benzene	10	U	
79-01-6	Trichloroethene	6	J	
78-87-5	1,2-Dichloropropane	10	U	
75-27-4	Bromodichloromethane	10	U	
10061-01-5	cis-1,3-Dichloropropene	10	U	
10061-02-6	trans-1,3-Dichloropropene	10	U	
79-00-5	1,1,2-Trichloroethane	10	U	
124-48-1	Dibromochloromethane	10	U	
75-25-2	Bromoform	10	U	
108-10-1	4-Methyl-2-pentanone	10	U	
108-88-3	Toluene	10	U	
591-78-6	2-Hexanone	10	U	
127-18-4	Tetrachloroethene	10	U	
108-90-7	Chlorobenzene	10	U	
100-41-4	Ethylbenzene	10	U	
108-38-3/106-42-3	(m+p)Xylene	10	UA	
95-47-6	o-Xylene	10	U	
100-42-5	Styrene	10	U:	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	CAS/RC	ОСН		Contract:	WCC	MW-1	0D
Lab Code:	10145	Ca	se No.: R21-	8565 SAS No	o.:	SDG No.: MV	V-1
Matrix: (soil/	water)	WATER		La	b Sample II	D: 492834 1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	La	b File ID:	H9664.D	
Level: (low/	med)	LOW		Da	ate Received	d: 09/13/01	No.
% Moisture:	not dec.			Da	ate Analyzed	1: 09/19/01	
GC Column:	RTX50	02. ID: 0.	53 (mm)	Di	lution Facto	r. 1.0	
Soil Extract	Volume		_ (uL)	Sc	oil Aliquot Vo	olume:	(uL)
				CONCENTRA		S:	
Number TIC	s found:	0	_	(ug/L or ug/Kg) <u>UG/L</u>		
CAS NO.		COMPO	UND		RT	EST. CONC.	Q

EPA SAMPLE NO.

MW-13[

Lab Name:	CAS/RO	DCH	-	Contract:	WCC		
Lab Code:	10145	C	ase No.: R21-8565	SAS No.	:s	DG No.: MW-1	
Matrix: (soil/	water)	WATER		Lab	Sample ID:	492835 1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	Lab	File ID:	H9665.D	
Level: (low/	med)	LOW		Dat	e Received:	09/13/01	
% Moisture:	not dec.			Dat	e Analyzed:	09/19/01	
GC Column	RTX5	02. ID: 0	.53 (mm)	Dilu	ution Factor:	1.0	
Soil Extract	Volume		(uL)	Sol	Aliquot Volu	ume:	(uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	UJ
75-35-4	1.1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	2	J
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	120	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3		10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U =
79-34-5	1,1,2,2-Tetrachloroethane	10	U

EPA SAMPLE NO.

Lab Name:	CAS/RC	ОСН	-	Contract: WCC	MW-11D	
Lab Code:	10145	Ca	se No.: R21-8565	SAS No.:	SDG No.: MW-1	
Matrix: (soil/	water)	WATER		Lab Sample ID	: 492836 1.0	
Sample wt/v	ol:	5.0	(g/ml) ML	Lab File ID:	H9666.D	
Level: (low/	med)	LOW		Date Received	1: 09/13/01	
% Moisture:	not dec.			Date Analyzed	: 09/19/01	
GC Column:	RTX5	02. ID: 0.	53 (mm)	Dilution Factor	1.0	
Soil Extract	Volume		_ (uL)	Soil Aliquot Vo	lume:	(uL

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	บป
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U.
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EP	A	SA	MP	LE	NO).

Lab Name:	CAS/RO	ОСН		Contract:	wcc		MAA-11D	
Lab Code:	10145	Ca	se No.: R21-	8565 SAS N	o.:	_ SDG No.	: <u>MW-1</u>	
Matrix: (soil/	water)	WATER		La	b Sample	e ID: 49283	6 1.0	
Sample wt/v	rol:	5.0	(g/ml) ML	La	b File ID	H9666	.D	
Level: (low/	med)	LOW		Da	ate Recei	ved: 09/13/	01	
% Moisture:	not dec.			Da	ate Analy	zed: 09/19/	01	
GC Column	RTX5	02. ID: 0.	53 (mm)	Di	lution Fa	ctor: 1.0		
Soil Extract	Volume		_ (uL)	So	oil Aliquo	Volume:		_ (uL)
				CONCENTRA				
Number TIC	s found:	0		(ug/L or ug/Kg) <u>UG</u>	5/L		
CAS NO.		СОМРО	JND		RT	EST. CO	NC.	Q

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET RW-01 Lab Name: CAS/ROCH Contract: WCC Matrix: (soil/water) WATER Lab Sample ID: 492837 1.0 Sample wt/vol: 5.0 (g/ml) ML Lab File ID: H9667.D LOW Date Received: 09/13/01 Level: (low/med) % Moisture: not dec. Date Analyzed: 09/19/01 GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Extract Volume (uL) Soil Aliquot Volume: (uL) **CONCENTRATION UNITS:** COMPOUND (ug/L or ug/Kg) UG/L CAS NO. Q 74-87-3 Chloromethane 10 75-01-4 Vinyl chloride 10 74-83-9 Bromomethane 10 U 75-00-3 Chloroethane 10 U 75-69-4 Trichlorofluoromethane 10 10UJ 67-64-1 Acetone 2 75-35-4 1,1-Dichloroethene 10 U 75-09-2 Methylene chloride 10 U Carbon disulfide 75-15-0 10 156-60-5 trans-1,2-Dichloroethene 10 75-34-3 1.1-Dichloroethane 10 U 78-93-3 2-Butanone 10 U 156-59-2 cis-1.2-Dichloroethene 9 J 67-66-3 Chloroform 10 U 107-06-2 1,2-Dichloroethane 10 U 71-55-6 1.1.1-Trichloroethane 8 J 56-23-5 Carbon tetrachloride 10 U 71-43-2 Benzene 10 U 440 79-01-6 Trichloroethene -390 78-87-5 1,2-Dichloropropane 10 U 75-27-4 Bromodichloromethane 10 U 10061-01-5 cis-1,3-Dichloropropene 10 U 10061-02-6 trans-1,3-Dichloropropene U 10 79-00-5 1,1,2-Trichloroethane 10 U -U 124-48-1 Dibromochloromethane 10 75-25-2 Bromoform 10 U 4-Methyl-2-pentanone 108-10-1 1 J 108-88-3 Toluene 10 U 591-78-6 2-Hexanone 10 U 127-18-4 Tetrachloroethene 10 U 108-90-7 Chlorobenzene U 10 100-41-4 Ethylbenzene U 10 108-38-3/106-42-3 (m+p)Xylene 10 U

o-Xylene

1.1.2.2-Tetrachloroethane

Styrene

95-47-6

100-42-5

79-34-5

U

U

U

10

10

10

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	CAS/RC	CH		Contract:	WCC		W-01
Lab Code:	10145	Cas	se No.: R21-8	565 SAS N	o.:	SDG No.:	MW-1
Matrix: (soil/	water)	WATER	1 1107	La	ab Sample	D: 492837 1	.0
Sample wt/v	ol:	5.0	(g/ml) ML	La	ab File ID:	H9667.D	
Level: (low/	med)	LOW		D	ate Recei	ved: 09/13/01	
% Moisture:	not dec.			D	ate Analy	zed: 09/19/01	
GC Column	RTX50	2. ID: 0.	53 (mm)	D	ilution Fac	ctor: 1.0	
Soil Extract	Volume		_ (uL)	s	oil Aliquot	Volume:	(uL)
				CONCENTRA			
Number TIC	s found:	0		(ug/L or ug/Kg) <u>UG</u>	/L	
CAS NO.		COMPOL	JND		RT	EST. CONC	. Q

1

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RW-01DL Lab Name: CAS/ROCH Contract: WCC Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1 Matrix: (soil/water) WATER Lab Sample ID: 492837 2.5 Sample wi(vol: 5.0 (g/ml) ML Lab File ID: H9681.D Level: (low/red) LOW Date Received: 09/13/01 % Moisture: not dec. Date Analyzed: 09/20/01/ GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 2.5 Soil Aliquot Volume: Soil Extract Volume (uL) (uL) CONCENTRATION UNITS: (ug/L or ug/Kg) COMPOUND UG/L Q CAS NO. Chloremethane 25 U 74-87-3 Vinyl chloride 25 U 75-01-4 25 U 74-83-9 Bromomethane Chloroethane 25 U 75-00-3 U Trichlorofluoromethane 25 75-69-4 25 U 67-64-1 Acetone 1.1-Dichloroethere 25 u 75-35-4 75-09-2 Methylene chloride 25 U 75-15-0 Carbon disulfide 25 U trans-1,2-Dichloroethene U 156-60-5 25 1,1-Dichloroethane U 75-34-3 25 U 78-93-3 2-Butanone 25 cis-1,2-Dichloroethene JD 156-59-2 9 67-66-3 Chloroform 25 U 1,2-Dichloroethane 25 U 107-06-2 1,1,1-Trichleroethane JD 71-55-6 8 Carbon tetrachloride U 56-23-5 U 71-43-2 Benzene 25 79-01-6 Trichloroethene 440 D 1.2-Dichloropropane 25 U 78-87-5 75-27-4 Bromodichloromethane 25 10061-01-5 cis-1,3-Dichloropropene 25 U trans-1,3-Dichloropropene 25 U 10061-02-6 79-00-5 1,1,2-Trichloroethane 25 U 124-48-1 Dibromochloromethane U 75-25-2 25 Bromoform U 108-10-1 4-Methyl-2-pentanone 25 U 108-88-3 25 U Toluene 591-78/6 2-Hexanone 25 W 127-1/8-4 Tetrachioroethene 25 108-90-7 Chlorobenzene 25 100-41-4 Ethylbenzene U 25 108-38-3/106-42-3 (m+p)Xylene 25 U U. 95-47-6 o-Xylene 25 100-42-5 Styrene 25 U-

1.1.2.2-Tetrachloroethane

79-34-5

U

25

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMP	LE	NO

Lab Name:	CAS/RO	CH		Contract:	WCC	KW-01DI	
Lab Code:	10145	Cas	se No.: R21-8	565 SAS N	o.:	SDG No.: MW-1	
Matrix: (soil/	water)	WATER		La	b Sample	ID: 492837 2.5	
Sample wt/v	ol:	5.0	(g/ml) ML	La	b File ID:	H9681.D	_
Level: (low/	med)	LOW		Da	ate Receiv	/ed: 09/13/01	
% Moisture:	not dec.			Da	ate Analyz	red: 09/20/01	
GC Column:	RTX50	2. ID: 0.	53 (mm)	Di	lution Fac	tor: 2.5	
Soil Extract	Volume .		_ (uL)	S	oil Aliquot	Volume:	_ (uL)
Number TIC	s found:	0		CONCENTRA (ug/L or ug/Kg			
CAS NO.		COMPOL	IND		RT	EST. CONC.	Q

EPA SAMPLE NO.

Lab Name: CAS/ROCH	- (Contract: WCC	RI	N-03	
Lab Code: 10145	Case No.: R21-8565	SAS No.:	DG No.: M	/IVV-1	
Matrix: (soil/water) WA		Lab Sample ID:			
Sample wt/vol: 5.0		Lab File ID:	H9680.D		
Level: (low/med) LOV		Date Received:	09/13/01		
% Moisture: not dec.		Date Analyzed:		N.	
		Dilution Factor:			
GC Column: RTX502.				_	
Soil Extract Volume	(uL)	Soil Aliquot Vol	ume:		(uL)
	COM	CENTRATION LIMITS			
		CENTRATION UNITS		0	
CAS NO.	COMPOUND (ug/L	or ug/Kg) UG/L		Q	
74-87-3	Chloromethane		10	U	
75-01-4	Vinyl chloride		10	U	
74-83-9	Bromomethane		10	U	
75-00-3	Chloroethane		10	U	
75-69-4	Trichlorofluoromethane		10	U	
	Acetone		3	J	= 10UJ
67-64-1			10	U	- 1000
75-35-4	1,1-Dichloroethene			U	
75-09-2	Methylene chloride		10		-
75-15-0	Carbon disulfide		10	U	
156-60-5	trans-1,2-Dichloroethene		10	U	_
75-34-3	1,1-Dichloroethane		10	U	_ /
78-93-3	2-Butanone		10	U	
156-59-2	cis-1,2-Dichloroethene		1	J	
67-66-3	Chloroform		10	U	
107-06-2	1,2-Dichloroethane		10	U	
71-55-6	1,1,1-Trichloroethane		3	J	
56-23-5	Carbon tetrachloride		10	U	
71-43-2	Benzene		10	U	
79-01-6	Trichloroethene		160		
78-87-5	1,2-Dichloropropane		10	U	
75-27-4	Bromodichloromethane		10	U	
10061-01-5	cis-1,3-Dichloropropene		10	U	-
10061-02-6	trans-1,3-Dichloroproper	ne	10	U	
79-00-5	1,1,2-Trichloroethane		10	U	
124-48-1	Dibromochloromethane		10	U	*
75-25-2	Bromoform		10	U	
108-10-1	4-Methyl-2-pentanone		10	U	
108-88-3	Toluene		10	U	
591-78-6	2-Hexanone		10	U	_
127-18-4	Tetrachloroethene	-	10	U	
108-90-7	Chlorobenzene		10	U	
100-90-7			10	U	
	Ethylbenzene		10	U	-
108-38-3/106-42-3	(m+p)Xylene			U	
95-47-6	o-Xylene		10	U	-
100-42-5	Styrene		10		-
79-34-5	1,1,2,2-Tetrachloroethan	ie	10	U	

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAM	PLE	NO
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Lab Name: CAS	ROCH		Contract: W	/CC	RV	V-03
Lab Code: 1014		se No.: R21-8565			DG No.: N	1W-1
Matrix: (soil/water)	WATER		Lab S	ample ID:	492838 1.	0
Sample wt/vol:	5.0	(g/ml) ML	Lab F	ile ID:	H9680.D	
Level: (low/med)	LOW		Date	Received:	09/13/01	
% Moisture: not de	c.		Date	Analyzed:	09/20/01	
GC Column: RT.	X502. ID: 0	.53 (mm)	Dilutio	on Factor.	1.0	
Soil Extract Volum	е	(uL)	Soil A	diquot Volu	ıme:	(uL)
Number TICs foun	d: <u>0</u>		NCENTRATIC L or ug/Kg)	UG/L		
CAS NO.	сомро	UND		RT ES	ST. CONC.	Q

EPA SAMPLE NO.

COOLER BLK

Lab Name: CAS/ROCH Contract: WCC Case No.: R21-8565 SAS No.: SDG No.: MW-1 Lab Code: 10145 Lab Sample ID: 492839 1.0 Matrix: (soil/water) WATER 5.0 (g/ml) ML Lab File ID: H9682.D Sample wt/vol: Date Received: 09/13/01 Level: (low/med) LOW Date Analyzed: 09/20/01 % Moisture: not dec. GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Extract Volume (uL) Soil Aliquot Volume:

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	UJ
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3		10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	CAS/RO		VEET IDENTIF	_ Contract:			COOLER	BLK
Lab Code:	10145	Cas	se No.: R21-85	65 SAS N	o.:	_ SI	OG No.: MW	/-1
Matrix: (soil/	water)	WATER		La	b Sample	e ID:	492839 1.0	
Sample wt/ve	ol:	5.0	(g/ml) ML	La	b File ID:		H9682.D	
Level: (low/r	med)	LOW		Da	ate Recei	ved:	09/13/01	
% Moisture:	not dec.			Da	ate Analy	zed:	09/20/01	
GC Column:	RTX502	2. ID: 0.5	3 (mm)	Di	lution Fac	ctor:	1.0	
Soil Extract \	Volume _		_ (uL)	Sc	oil Aliquot	Volu	me:	(uL)
				ONCENTRA				
Number TICs	s found:	0		.g. = 0. ug/1\g	, <u>5</u>	7		
CAS NO.		COMPOU	IND		RT	ES	T. CONC.	Q

2A WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS/ROCH Contract: WCC

	EPA	SMC1	SMC2	SMC3	TOT
	SAMPLE NO.	#	#	#	OUT
01	VBLK01	104	102	99	0
02	VBLK01MS	102	101	88	0
03	MW-1	103	100	100	0
04	MW-3	102	102	100	0
05	MW-5D	106	102	99	0
06	MW-6S	106	102	99	0
07	MW-7D	107	102	99	0
08	VBLK02	99	101	100	0
09	VBLK02MS	90	103	98	0
10	MW-6D	101	100	97	0
11	MW-6DMS	103	100	97	0
12	MW-6DMSD	104	100	97	0
13	MW-7S	103	100	100	0
14	TB-1 9-13-01	104	99	98	0
15	DUP	103	101	100	0
16	MW-9S	103	100	98	0
17	MW-9D	102	101	99	0
18	MW-10S	102	102	99	0
19	MW-10D	102	102	99	0
20	MW-13D	103	102	97	0
21	MW-11D	104	102	99	0
22	RW-01	105	100	101	0
23	VBLK03	106	100	99	0
24	VBLK03MS	105	101	100	0
25	RW-03	108	100	100	0
26	RW-01DL	110	101	103	0
27	COOLER BLK	106	101	102	0

			QC LIMITS
SMC1	=	1,2-Dichloroethane-d4	(76-114)
SMC2	=	Toluene-d8	(88-110)
SMC3	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery values

D System Monitoring Compound diluted out

^{*} Values outside of contract required QC limits

3A WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS/ROCH Contract: WCC

Matrix Spike - EPA Sample No.: MW-6D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMITS REC.
1,1-Dichloroethene	50	0.0	49	98	61 - 145
Benzene	50	0.0	50	100	76 - 127
Trichloroethene	50	80	130	106	71 - 120
Toluene	50	0.0	48	96	76 - 125
Chlorobenzene	50	0.0	49	98	75 - 130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC#	% RPD#	QC I	IMITS REC.
1,1-Dichloroethene	50	48	96	2	14	61 - 145
Benzene	50	49	98	2	11	76 - 127
Trichloroethene	50	130	100	0	14	71 - 120
Toluene	50	48	96	0	13	76 - 125
Chlorobenzene	50	50	100	2	13	75 - 130

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS:

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

EPA SAMPLE NO.

MW-6DMS Lab Name: CAS/ROCH Contract: WCC Case No.: R21-8565 SAS No.: SDG No.: MW-1 Lab Code: 10145

Lab Sample ID: 492826 1.0 MS Matrix: (soil/water) WATER

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: H9655.D Level: (low/med) LOW Date Received: 09/13/01

% Moisture: not dec. Date Analyzed: 09/19/01

GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0

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

	CONCENTRATION UNITS:				
CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L	Q	
74-87-3	Chloromethane		10	U	
75-01-4	Vinyl chloride		10	U	
74-83-9	Bromomethane		10	U	
75-00-3	Chloroethane		10	U	
75-69-4	Trichlorofluoron	nethane	10	U	
67-64-1	Acetone		10	U	
75-35-4	1,1-Dichloroeth	ene	49		
75-09-2	Methylene chlor	ride	10	U	
75-15-0	Carbon disulfide	9	10	U	
156-60-5	trans-1,2-Dichlo	roethene	10	U	
75-34-3	1,1-Dichloroeth	ane	10	U	
78-93-3	2-Butanone		10	U	
156-59-2	cis-1,2-Dichloro	ethene	3	J	
67-66-3	Chloroform		10	U	
107-06-2	1,2-Dichloroeth	ane	10	U	
71-55-6	1,1,1-Trichloroe	1,1,1-Trichloroethane		J	
56-23-5		Carbon tetrachloride		U	
71-43-2	Benzene		10 50		
79-01-6	Trichloroethene		130		
78-87-5	1,2-Dichloropro	pane	10	U	
75-27-4	Bromodichloron		10	U	
10061-01-5	cis-1,3-Dichloro	propene	10	U	
10061-02-6	trans-1,3-Dichlo		10	U	
79-00-5	1,1,2-Trichloroe	thane	10	U	
124-48-1	Dibromochloron	nethane	10	U	
75-25-2	Bromoform		10	U	
108-10-1	4-Methyl-2-pent	anone	10	U	
108-88-3	Toluene		48		
591-78-6	2-Hexanone		10	U	
127-18-4	Tetrachloroethe	ne	10	U	
108-90-7	Chlorobenzene		49		
100-41-4	Ethylbenzene		10	U	
108-38-3/106-42-3			10	U.	
95-47-6	o-Xylene		10	U	
100-42-5	Styrene		10	U:	
79-34-5	1,1,2,2-Tetrachl	oroethane	10	U	

EPA SAMPLE NO.

Lab Name:	CAS/RC	DCH .		Contract:	WCC	MAA-ODIMOD	
Lab Code:	10145	Cas	se No.: R21-8565	SAS No.	: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER		Lab	Sample ID:	492826 1.0 MSD	-
Sample wt/ve	ol:	5.0	(g/ml) ML	Lab	File ID:	H9656.D	
Level: (low/r	med)	LOW		Dat	e Received:	09/13/01	
% Moisture:	not dec.			Dat	e Analyzed:	09/19/01	
GC Column:	RTX5	02. ID: 0.5	(mm)	Dilu	tion Factor:	1.0	
Soil Extract \	/olume		_ (uL)	Soil	Aliquot Volu	ıme:	(uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	48	- 0
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	3	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	5	J
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	49	0
79-01-6	Trichloroethene	130	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	48	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	50	0
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

3A WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS/ROCH - Contract: WCC

Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1

Matrix Spike - EPA Sample No.: VBLK01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMITS REC.
1,1-Dichloroethene	50	0.0	48	96	61 - 145
Benzene	50	0.0	50	100	76 - 127
Trichloroethene	50	0.0	48	96	71 - 120
Toluene	50	0.0	47	94	76 - 125
Chlorobenzene	50	0.0	49	98	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

Spike Recovery: 0 out of 10 outside limits

COMMENTS:	5	

^{*} Values outside of QC limits

EPA SAMPLE NO.

VBLK01MS

Lab Name:	CAS/RC	OCH		Contract: WCC		
Lab Code:	10145	Cas	e No.: R21-8565	SAS No.:	SDG No.: MW-1	
Matrix: (soil/	water)	WATER		Lab Sample	ID: VBLKMS	
Sample wt/vo	ol:	5.0	(g/ml) ML	Lab File ID:	H9633.D	
Level: (low/r	med)	LOW		Date Receive	ed:	
% Moisture:	not dec.			Date Analyze	ed: 09/18/01	
GC Column:	RTX5	02. ID: 0.5	(mm)	Dilution Fact	or: 1.0	
Soil Extract \	Volume		_ (uL)	Soil Aliquot	Volume:	(uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	48	
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	50	
79-01-6	Trichloroethene	48	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	47	
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U.
95-47-6	o-Xylene	10	U.
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

3A WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS/ROCH _ Contract: WCC

Matrix Spike - EPA Sample No.: VBLK02

	SPIKE	SAMPLE	MS	MS	QC
	ADDED	CONCENTRATION	CONCENTRATION	%	LIMITS
COMPOUND	(ug/L)	(ug/L)	(ug/L)	REC#	REC.
1,1-Dichloroethene	50	0.0	48	96	61 - 145
Benzene	50	0.0	43	86	76 - 127
Trichloroethene	50	0.0	48	96	71 - 120
Toluene	50	0.0	49	98	76 - 125
Chlorobenzene	50	0.0	49	98	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

- RPD: 1 out of 5 outside limits Diso/05/01 Spike Recovery: 0 out of 10 outside limits

COMMENTS:	

^{*} Values outside of QC limits

EPA SAMPLE NO.

VBLK02MS

_
_ (uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	48	
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	43	
79-01-6	Trichloroethene	48	
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	49	
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachioroethene	10	U
108-90-7	Chlorobenzene	49	
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

3A WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS/ROCH - Contract: WCC

Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1

Matrix Spike - EPA Sample No.: VBLK03

	SPIKE			MS %	QC LIMITS
COMPOUND	(ug/L)	(ug/L)	(ug/L)	REC#	REC.
1,1-Dichloroethene	50	0.0	52	104	61 - 145
Benzene	50	0.0	50	100	76 - 127
Trichloroethene	50	0.0	55	110	71 - 120
Toluene	50	0.0	49	98	76 - 125
Chlorobenzene	50	0.0	50	100	75 - 130

Column to be used to flag recovery and RPD values with an asterisk

Spike Recovery: 0 out of 16 outside limits

COMMENTS:	,	

^{*} Values outside of QC limits

EPA SAMPLE NO.

VBLK03MS Lab Name: CAS/ROCH Contract: WCC Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1 Lab Sample ID: VBLKMS Matrix: (soil/water) WATER 5.0 (g/ml) ML Sample wt/vol: Lab File ID: H9679.D Level: (low/med) LOW Date Received: % Moisture: not dec. Date Analyzed: 09/20/01 GC Column: RTX502. ID: 0.53 (mm) Dilution Factor: 1.0 Soil Aliquot Volume: Soil Extract Volume (uL) (uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	52	
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	50	
79-01-6	Trichloroethene	55	(
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	49	0
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	50	
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U.
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

4A VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

				VBLK01
Lab Name:	CAS/ROCH -	Contract:	WCC	

Lab File ID: H9632.D Lab Sample ID: VBLK

Date Analyzed: 09/18/01 Time Analyzed: 11:12

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

				A Committee of the Comm
	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
01	VBLK01MS	VBLKMS	H9633.D	11:55
02	MW-1	492822 1.0	H9643.D	18:51
03	MW-3	492823 1.0	H9644.D	19:28
04	MW-5D	492824 1.0	H9645.D	20:06
05	MW-6S	492825 1.0	H9646.D	20:43
06	MW-7D	492830 1.0	H9647.D	21:20

COMMENTS

EPA SAMPLE NO.

Lab Name:	CAS/R	OCH -		Contract: V	VCC	VBLK01	
Lab Code:	10145	Cas	se No.: R21-856	5 SAS No.:	S	DG No.: MW-1	
Matrix: (soil/	water)	WATER		Lab S	ample ID:	VBLK	
Sample wt/v	ol:	5.0	(g/ml) ML	_ Lab F	ile ID:	H9632.D	
Level: (low/	med)	LOW		Date	Received:		
% Moisture:	not dec.			Date	Analyzed:	09/18/01	
GC Column:	RTX5	02. ID: 0.5	53 (mm)	Dilutio	on Factor.	1.0	
Soil Extract	Volume		(uL)	Soil A	Jiauot Volu	me.	(ul.)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: CAS/R	ROCH	Contract: WCC	VBLK	01
Lab Code: 10145	Case No.: R2	1-8565 SAS No.:	SDG No.: MW	/-1
Matrix: (soil/water)	WATER	Lab Samp	ole ID: VBLK	
Sample wt/vol:	5.0 (g/ml) MI	Lab File II	D: H9632.D	
Level: (low/med)	LOW	Date Rec	eived:	
% Moisture: not dec.		Date Anal	yzed: 09/18/01	
GC Column: RTX	502. ID: 0.53 (mm)	Dilution F	actor: 1.0	
Soil Extract Volume (uL)		Soil Aliqu	ot Volume:	(uL)
Number TICs found:	0	CONCENTRATION U (ug/L or ug/Kg)	NITS: G/L	
CAS NO.	COMPOUND	RT	EST. CONC.	Q

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK02

Lab Name: CAS/ROCH

Contract: WCC

Lab Code: 10145

Case No.: R21-8565 SAS No.: SDG No.: MW-1

Lab File ID:

H9652.D

Lab Sample ID: VBLK

Date Analyzed: 09/19/01

Time Analyzed: 10:32

GC Column: RTX502. ID: 0.53 (mm)

Heated Purge: (Y/N) N

Instrument ID: GCMS#1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
01	VBLK02MS	VBLKMS	H9653.D	11:16
02	MW-6D	492826 1.0	H9654.D	11:54
03	MW-6DMS	492826 1.0 MS	H9655.D	12:31
04	MW-6DMSD	492826 1.0 MSD	H9656.D	13:09
05	MW-7S	492827 1.0	H9658.D	14:31
06	TB-1 9-13-01	492828 1.0	H9659.D	15:12
07	DUP	492829 1.0	H9660.D	15:52
08	MW-9S	492831 1.0	H9661.D	16:40
09	MW-9D	492832 1.0	H9662.D	17:22
10	MW-10S	492833 1.0	H9663.D	18:00
11	MW-10D	492834 1.0	H9664.D	18:38
12	MW-13D	492835 1.0	H9665.D	19:15
13	MW-11D	492836 1.0	H9666.D	19:53
14	RW-01	492837 1.0	H9667.D	20:30

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EPA SAMPLE NO.

Lab Name:	CAS/RO	DCH			Contract:	WCC	VBLRUZ	
Lab Code:	10145		Case No.:	R21-8565	SAS No	.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER	2		Lat	Sample ID:	VBLK	
Sample wt/v	ol:	5.0	(g/ml)	ML	Lat	File ID:	H9652.D	
Level: (low/r	med)	LOW			Da	te Received:		
% Moisture:	not dec.	-			Da	te Analyzed:	09/19/01	
GC Column:	RTX5	02. ID:	0.53 (n	nm)	Dile	ution Factor:	1.0	
Soil Extract	Volume		(uL)		Soi	il Aliquot Vol	ume:	(uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

VOLATILE ORGANICS ANALYSIS DATA SHEET EPA SAMPLE NO. TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:	CAS/ROC	Н	Contract: WCC	VBLK	02
Lab Code:	10145	Case No.: R21-85	55 SAS No.:	SDG No.: MW	-1
Matrix: (soil/	water) _\	WATER	Lab Samp	le ID: VBLK	
Sample wt/v	ol: 5	6.0 (g/ml) ML	Lab File ID	H9652.D	
Level: (low/	med) L	.OW	Date Rece	ived:	
% Moisture:	not dec.		Date Analy	/zed: 09/19/01	
GC Column:	RTX502	. ID: 0.53 (mm)	Dilution Fa	actor: 1.0	
Soil Extract	Volume _	(uL)	Soil Alique	t Volume:	(uL)
Number TIC	s found:		ONCENTRATION UI	NITS:	
CAS NO.		COMPOUND	RT	EST. CONC.	Q

4A VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: CAS/ROCH Contract: WCC VBLK03

Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1

Lab File ID: H9678.D Lab Sample ID: MET BLK

Date Analyzed: 09/20/01 Time Analyzed: 15:48

GC Column: RTX502. ID: 0.53 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMS#1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK03MS	VBLKMS	H9679.D	16:28
02	RW-03	492838 1.0	H9680.D	17:09
03	RW-01DL	492837 2.5	H9681.D	17:50
04	COOLER BLK	492839 1.0	H9682.D	18:28

COMMENTS

EPA SAMPLE NO.

Lab Name:	CAS/R	ОСН	-		Contract:	WCC	VBLK03	
Lab Code:	10145		ase No.:	R21-8565	SAS No	o.: s	DG No.: MW-1	
Matrix: (soil/	water)	WATER			La	b Sample ID:	MET BLK	
Sample wt/v	ol:	5.0	(g/ml)	ML	La	b File ID:	H9678.D	
Level: (low/	med)	LOW	-		Da	te Received:		
% Moisture:	not dec.				Da	te Analyzed:	09/20/01	
GC Column:	RTX5	02. ID:	0.53 (m	nm)	Dil	ution Factor:	1.0	
Soil Extract	Volume		(uL)		So	il Aliquot Vol	ume:	(ul

CAS NO.	COMPOUND (ug/L or ug/Kg)	UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	10	U
75-09-2	Methylene chloride	10	U
75-15-0	Carbon disulfide	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1.1.1-Trichloroethane	10	U
56-23-5	Carbon tetrachloride	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
108-38-3/106-42-3	(m+p)Xylene	10	U
95-47-6	o-Xylene	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMPL	E NO
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Lab Name:	CAS/RO	СН	Contract: WCC	VBLK03	
Lab Code:	10145	Case No.: R21-	8565 SAS No.:	SDG No.: MW-1	
Matrix: (soil/	water)	WATER	Lab Sample	ID: MET BLK	
Sample wt/v	rol:	5.0 (g/ml) ML	Lab File ID:	H9678.D	
Level: (low/	med)	LOW	Date Receiv	red:	
% Moisture:	not dec.		Date Analyz	ed: 09/20/01	
GC Column:	RTX502	2. ID: 0.53 (mm)	Dilution Fac	tor: 1.0	
Soil Extract	Volume _	(uL)	Soil Aliquot	Volume:	(uL)
Number TIC	s found:	0	CONCENTRATION UNI		
CAS NO.		COMPOUND	RT	EST. CONC.	Q

8A VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS/ROCH . Contract: WCC

Lab File ID (Standard): H9631.D Date Analyzed: 09/18/01

Instrument ID: GCMS#1 Time Analyzed: 10:29

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 H	DUR ST	193110	12.96	849748	15.06	672960	22.25
LOW	ER LIMIT	96555	12.46	424874	14.56	336480	21.75
UPPE	RLIMIT	386220	13.46	1699496	15.56	1345920	22.75
	SAMPLE NO.						
VBLI	(01	192059	12.92	864665	15.04	684386	22.23
VBL	K01MS	194348	12.92	870956	15.04	692759	22.25
MW-	1	165386	12.90	725444	15.03	576754	22.21
MW-	3	169444	12.91	715523	15.03	562385	22.22
MW-	5D	180204	12.90	801380	15.03	628392	22.22
MW-	6S	178717	12.91	789737	15.03	628731	22.22
MW-	7D	174736	12.91	775764	15.03	616863	22.20

IS1 = Bromochloromethane IS2 = 1,4-Difluorobenzene IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.

^{*} Values outside of contract required QC limits

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS/ROCH Contract: WCC

Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1

Lab File ID (Standard): H9651.D Date Analyzed: 09/19/01

Instrument ID: GCMS#1 Time Analyzed: 09:47

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
	12 HOUR ST	182677	12.94	813264	15.06	651366	22.27
	LOWER LIMIT	91339	12.44	406632	14.56	325683	21.77
	UPPER LIMIT	365354	13.44	1626528	15.56	1302732	22.77
	EPA SAMPLE NO.						
01	VBLK02	188183	12.94	835806	15.04	659454	22.23
02	VBLK02MS	187386	12.96	845112	15.08	582156	22.27
03	MW-6D	161525	12.94	740763	15.04	581331	22.25
)4	MW-6DMS	162712	12.93	737118	15.05	586381	22.24
05	MW-6DMSD	162757	12.92	751013	15.04	594535	22.23
06	MW-7S	162608	12.92	740610	15.04	587152	22.22
7	TB-1 9-13-01	160434	12.92	726762	15.03	579551	22.23
80	DUP	161263	12.91	740026	15.03	570893	22.22
9	MVV-9S	159400	12.92	722978	15.04	568584	22.23
0	MW-9D	156273	12.92	711082	15.04	557392	22.23
11	MW-10S	156554	12.91	707020	15.03	554827	22.22
2	MW-10D	156218	12.90	697165	15.03	549902	22.22
3	MW-13D	151781	12.91	691324	15.03	539333	22.22
14	MW-11D	154032	12.91	695194	15.03	549232	22.22
15	RW-01	152285	12.91	684057	15.03	541030	22.22

IS1 = Bromochloromethane IS2 = 1,4-Difluorobenzene IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.

^{*} Values outside of contract required QC limits

8A VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS/ROCH Contract: WCC

Lab Code: 10145 Case No.: R21-8565 SAS No.: SDG No.: MW-1

Lab File ID (Standard): H9677.D Date Analyzed: 09/20/01

Instrument ID: GCMS#1 Time Analyzed: 15:04

GC Column: RTX502.2 ID: 0.53 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR S	Т 197728	12.97	844418	15.08	586199	22.27
LOWER LIN	IIT 98864	12.47	422209	14.58	293100	21.77
UPPER LIM	IT 395456	13.47	1688836	15.58	1172398	22.77
EPA SAMPL	E					
1 VBLK03	162314	12.93	738615	15.05	591573	22.24
2 VBLK03MS	165169	12.94	735715	15.04	589560	22.23
3 RW-03	161849	12.94	735808	15.04	584908	22.23
4 RW-01DL	158805	12.92	727628	15.03	577788	22.23
5 COOLER B	LK 161389	12.94	719724	15.04	567447	22.25

IS1 = Bromochloromethane
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.

^{*} Values outside of contract required QC limits

ANALYTICAL DATA VALIDATION

GRIFFIN TECHNOLOGY SITE

SYSTEM OPERATION

SEMI-ANNUAL GROUNDWATER SAMPLING
SECOND ROUND 2001

INTRODUCTION

This appendix presents the findings of a validation of analytical data for samples collected in September 2001 at the Griffin Technology Inc. (GTI) Site. Sampling was conducted by URS Corporation (URS) and analytical services were provided by Columbia Analytical Services, Inc. (CASI) of Rochester, New York. Fifteen groundwater samples and associated QC samples were collected and analyzed for volatile organic compounds (VOCs) in accordance with New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) Method 95-1.

The procedures for validation of the data followed guidance from the following documents:

- Interim Remedial Measure Program Appendix B: Quality Assurance Project Plan (QAPP). July 1996. Prepared by Woodward-Clyde Consultants.
- CLP Organics Data Review and Preliminary Review. S.O.P. No. HW-6, Revision 11, June 1996. Prepared by USEPA Region II.

The above "Guidelines" provided the criteria to review. Additional acceptance criteria are given in the analytical method.

The criteria evaluated included the following:

VOCs

- Significant problems identified in case narrative
- Results reported from secondary dilutions
- Sample holding times
- Instrument performance and calibration
- Method blank and trip blank contamination
- Surrogate spike recoveries
- Laboratory control sample recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries and relative percent difference (RPD) values

VOCs continued:

- Internal standard areas and retention times
- Field duplicate results
- Compound identification and quantitation
- Overall assessment of data

The following sections present the data validation.

SIGNIFICANT PROBLEMS IDENTIFIED IN CASE NARRATIVE

No problems were identified in the case narrative.

RESULTS REPORTED FROM SECONDARY DILUTIONS

For samples that required dilutions, part of the validation process is to evaluate which set of results (initial or diluted) are considered to be most representative of the sample matrix. For this data set, one sample was analyzed at a dilution for VOCs.

• For the initial VOC analysis of sample RW-01 analyzed at a dilution factor of 1, the corresponding TCE concentration exceeded the instrument's linear calibration range and the sample was reanalyzed at a dilution factor of 2.5. For this sample, the TCE concentration reported from the diluted analysis (440 μg/L) is considered to be most representative of the samples' concentration and was transcribed onto the data summary table, along with any appropriate qualifiers.

SAMPLE HOLDING TIMES

The VOC holding time criterion established in the QAPP is seven days from receipt at the laboratory to analysis. All samples were analyzed within this time period.

GC/MS INSTRUMENT PERFORMANCE

GC/MS instrument performance checks are performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for instrument performance checks included evaluation of possible transcription or calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. All criteria for bromofluorobenzene (BFB) for VOCs were met for this data set. Additionally, no

transcription errors or calculation errors were noted during validation of the instrument performance data from this data set.

INITIAL AND CONTINUING CALIBRATION

Initial and continuing calibration criteria are established to ensure the instruments are capable of producing acceptable qualitative and quantitative data for VOCs. All initial and continuing calibrations were performed at the required frequency.

All VOC initial calibration relative response factor (RRF) values and all relative standard deviation (RSD) values between response factors met the acceptance criteria presented in the "Guidelines".

All VOC continuing calibration RRF values met the acceptance criterion presented in the "Guidelines". Three VOC continuing calibration analyses yielded a percent difference (%D) value for acetone above the "Guidelines" acceptance criterion of 25 percent (specifically, 27%, 34% and 29%). The positive and non-detected acetone results in all samples were qualified as estimated ("J" or "UJ"), in accordance with the "Guidelines".

LABORATORY METHOD BLANKS

Laboratory method blanks evaluate the existence and magnitude of contamination problems resulting from laboratory activities. VOC laboratory method blanks were analyzed at the prescribed method frequency.

All three VOC method blank samples were reported as non-detected for TCL-VOCs and tentatively identified compounds (TICs).

TRIP BLANK SAMPLES

Trip blank samples are used to assess VOC cross-contamination during shipment to the laboratory. Two trip blank sample, identified as "TB-1-9-13-01" and "Cooler Blank", were submitted with the cooler containing aqueous samples for VOC analyses.

Acetone was detected in the trip blank labeled TB-1-9-13-01 at a concentration of 2 J μ g/L. All positive detections for acetone in associated samples were qualified as non-detect at the reporting limit ("10 U μ g/L").

Associated Groundwater Samples: MW-1, MW-9S, MW-9D, DUP, RW-01, and RW-03.

SURROGATE SPIKE RECOVERIES

Samples analyzed for VOCs are spiked with surrogate compounds prior to analysis. Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. The "Guidelines" require that all VOC surrogate spike recoveries meet acceptance criteria.

All VOC surrogate spike recoveries were within the laboratory's established control limits, which indicated that the laboratory's preparation procedure was acceptable. Additionally, no errors in calculations or transcriptions were noted during the validation of the surrogate spike recoveries from this data set.

LABORATORY CONTROL SAMPLES

Laboratory control samples (LCS) are analyzed for VOCs and serve to monitor the overall performance of the steps in an analysis, including sample preparation.

All VOC LCS recoveries were within the laboratory's established control limits, indicating that the method was in control. Additionally, no errors in calculations or transcriptions were noted during the validation of the LCS recoveries from this data set.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

Matrix effects on the analytical results are evaluated by analyzing matrix spike/matrix spike duplicate (MS/MSD) samples. MW-6D was analyzed as an MS/MSD sample for this data set.

All VOC MS/MSD recoveries and relative percent differences (RPDs) were within the method established control limits, indicating that acceptable analytical accuracy was

achieved for these analyses. Additionally, no errors in calculations or transcriptions were noted during validation of the MS/MSD results from this data set.

INTERNAL STANDARDS

Internal standard (I.S.) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. Internal standard area counts may not vary by more than a factor of two (-50 percent to +100 percent) from the associated continuing calibration standard area counts. The retention times of the internal standards may not vary by more than ± 30 seconds from the associated continuing calibration standard retention times.

All VOC analyses reported for the groundwater samples had acceptable internal standard area counts and retention times. Validation of the I.S. data also included verification of retention times and areas summarized on the Form-8s to those on the instrument chromatograms on a 10 percent basis; no anomalies were noted.

FIELD DUPLICATE RESULTS

Field duplicate results were used to evaluate representativeness. For aqueous samples, when analytes for both duplicate and sample values are greater than five times the quantitation limit, satisfactory representativeness is indicated by an RPD less than or equal to 50 percent. Where one or both of the analytes of a field duplicate pair are reported at less than five times the quantitation limit, satisfactory representativeness is indicated if the field duplicate results agree within 2.5 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory representativeness of the results.

One field duplicate sample pair, labeled as MW-5D and DUP, was collected with this sampling event. The results reported for the field duplicate sample pair are in agreement with the above criteria, thus indicating that the aggregate sampling and analytical precision was acceptable for this data set.

COMPOUND IDENTIFICATION AND QUANTITATION

Data for one or more detected compound/analytes were checked for potential identification errors and were recalculated from the raw data. No anomalies or transcription errors were

noted during validation of the reported analyte identifications and quantitations. In addition, no Tentatively Identified Compounds (TICs) were detected in any of the samples.

OVERALL DATA ASSESSMENT

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision (based on the LCS, MS/MSD, and field duplicate results) were achieved for this data set. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated ("J" or "UJ") values, was 100 percent for this data set. Sample results from this investigation required some qualification based on the minor deficiencies summarized below:

- The positive acetone results in samples MW-1, MW-9S, MW-9D, DUP, RW-01, and RW-03 were qualified as non-detect at the reporting limit ("10 U μg/L") due to the detection of acetone at a similar concentration in the trip blank.
- The non-detected results for acetone in all samples were qualified as estimated ("UJ") due to outlying continuing calibration %Ds.

No transcription errors or calculation errors were found during validation of the reported VOC results from this data set.