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SEMI-ANNUAL O&M REPORT
REMEDIAL WORK ELEMENTS I, II AND IV
Reporting period December 19, 2003, through June 30, 2004

Malta Rocket Fuel Area Site
Malta, New York

Submitted to:

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CERTIFICATION: This document has been reviewed and is prepared in accordance with the contract documents.

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1.0 INTRODUCTION

This operations and maintenance (O&M) report documents on going O&M activities conducted at the Malta Rocket Fuel Area (MRFA) site, in the Town of Malta, New York. This report has been prepared in accordance with the following documents:

- *Operation and Maintenance Manual, Remedial Work Element I, Drinking Water, dated March 31, 1998 and prepared by ERM - Northeast, Inc.*
- *Operation and Maintenance Manual, Remedial Work Element I, Drinking Water, dated January 15, 2002, and prepared by IT Corporation, Inc., currently Shaw Environmental, Inc. (Shaw).*
- *Operations and Maintenance Manual, Remedial Work Element II, Groundwater, dated December 11, 1997 and prepared by ERM - Northeast, Inc.*
- *Operation and Maintenance Manual, Remedial Work Element IV, Institutional Controls, dated September 9, 1999, revised September 27, 1999, prepared by IT Corporation, Inc., currently Shaw.*

This report covers all site activities performed at the site, as required in each of the previously referenced documents, for the period from December 19, 2003 through June 30, 2004.

2.0 O&M OF REMEDIAL WORK ELEMENT I (Drinking Water)

According to the provisions of the *Operation and Maintenance Manual, Remedial Work Element I, Drinking Water, IT Corporation, Inc., January 15, 2002*, six monthly site visits were performed to inspect the groundwater treatment system (system) operation, record system operating conditions, and to determine system treatment effectiveness. The site visits took place on January 20, February 26, March 29, April 29, May 25, and June 30, 2004.

The groundwater treatment system is comprised of a packed tower air stripper. System influent and effluent samples were collected during the March 2, 2004 and May 25, 2004 site visits to document adherence to treatment system discharge objectives. Analytical results from these sample events, including validated analytical results and chain of custody forms are provided in **Appendix A**. The validation summary for samples is included in **Appendix E**.

During the reporting period, recovery wells RW-1D and RW-2D operated at instantaneous flow rates of approximately 7.2 and 7.1 gallons per minute (gpm), respectively, yielding a total instantaneous flow of approximately 14.3 gpm.

Review of the analytical results for influent and effluent treatment system samples collected in March 2004 and May 2004 confirm that during the reporting period, effluent water quality was well below the chemical specific effluent requirements presented in the O&M manual. Air stripper blower pressure readings as well as the effluent water quality data demonstrate that the air stripper packing material is not in need of cleaning or replacement. Additional discussions regarding air stripper flow, air stripper blower pressure readings and water quality sampling are presented below.

2.1 Remote Telemetry/Programmable Logic Controller

To ensure that the system operates continuously, system operating parameters are visually monitored during each of the monthly site visits and on a continual basis by a Remote Telemetry Unit (RTU). During the reporting period, the RTU notified key project personnel of alarm conditions via facsimile and voice messaging. The majority of alarm conditions received by the RTU were identified as AC Power Failures, Blower Low Amps or Blower Low Pressure. The AC power failure alarm conditions were apparently caused by short duration power failures which are typical at the Malta site. The power failures result in brief interruptions in the delivery of electrical power to the system and are not known to cause significant disruption to the

performance of the treatment system. Blower low amps or blower low pressure alarm conditions occurred infrequently during this reporting period; occasionally by themselves and occasionally in conjunction with AC power failure alarm conditions. No operator intervention at the Site was required to clear the alarm conditions identified during the reporting period. The alarm conditions identified by the RTU during the reporting period confirmed the proper operation of the system and the RTU's effectiveness in notifying project personnel of alarm conditions.

2.2 Visual System Inspection

Visual inspections were made of all accessible system components during monthly site visits in accordance with attached **Table 1**, **Maintenance Checklist**. Inspections were performed to check for signs of component wear, process piping leaks and each of the general maintenance requirements. **Table 2, Equipment Log, Air Stripper Maintenance** includes a summary of observations made during visual inspections.

Maintenance activities included regular inspection of the air stripper blower intake for obstructions, inspection of all process valves and piping to prevent leakage of untreated groundwater, and inspection of the air stripper sight tube for sediment buildup. In addition, the operation of the transfer sump pump and associated high level float was checked. The settling tank interior was also visually inspected for signs of sediment buildup or corrosion and the reservoir level was checked during each monthly visit.

The system was found to be in good working order during each of the monthly site visits, with the exception of the air stripper blower motor on February 26, 2004. On February 26, 2004, the blower motor sounded abnormal, indicating a potential need for replacement. To further evaluate the blower motor performance, field testing of the blower's air velocity confirmed that the blower was operating between 1,400 feet per minute (fpm) and 2,400 fpm, which was within the acceptable range for blower air velocity. The blower air pressure reading was 3.6 inches of water column, which was also within the acceptable range of pressure readings. As a conservative measure to ensure that water processed by the drinking water system would be adequately treated, the drinking water system was shut down until March 2, 2004, when the air stripper blower motor was replaced. The drinking water system was restarted immediately following the blower motor replacement.

2.2.1 Recovery Well Pump Inspection

Recovery well pumps were inspected during the May 26, 2004 site visit. Shaw personnel utilized confined space entry procedures to enter well vaults RW-1D and RW-2D and disconnect water supply piping. All system piping and electrical power supplies were locked and tagged out during maintenance and inspection activities. The pumps and associated down well pipe from each well casing were removed by hand. Pumps and discharge piping were inspected for corrosion, loose or damaged parts and other signs of wear or damage that would indicate a potential for pump failure.

The pump in RW-1D was encased in a four-inch polyvinyl chloride (PVC) section of slotted well screen. After removal of this protective screen, the pump was inspected and determined to be free of defects. A light coating of mineral scale had accumulated on the pump motor, likely the result of moderate heating during pump operation. There was no accumulation of material surrounding the actual pump intake screen. The pump was subsequently wiped down, the protective casing re-installed, and the pump re-positioned in the well without modification to the piping. Following installation, the pump was restarted and the piping was inspected for leaks in the well vault. Leaks within the vault were not observed.

The recovery pump in RW-2D was also removed and inspected in the same manner as the RW-1D pump. This pump does not have a protective casing installed on the pump body. A light accumulation of biological growth was observed on the pump intake. Water and a cloth were used to wipe the growth off the intake. No other problems were observed with the pump and it was subsequently re-installed without incident. Following re-installation, the pump was restarted and associated piping was inspected for leaks in the well vault. Leaks within the vault were not observed.

2.2.2 100,000 Gallon Reservoir Inspection

The annual inspection of the 100,000 gallon reservoir was performed on May 26, 2004. One centrifugal pump was utilized to reduce the level of water in the reservoir to allow Shaw personnel access to the interior. A dedicated suction hose was utilized to avoid possible contamination of the water supply. The reservoir level was reduced by approximately five feet before Shaw personnel entered the interior of the structure. All confined space entry procedures, including air monitoring and the use of retrieval equipment, were followed for the duration of the inspection.

The visual inspection of the reservoir did not reveal any problems. A hand held spotlight was used to assist personnel in the inspection of the interior reservoir walls. There were no signs of cracks in the concrete or any types of buildup or growth from biological activity. The standpipe was observed to be in good condition.

2.2.3 Air Stripper Tower Inspection

Shaw utilized a boom lift bucket truck to access the top section of the air stripper tower on May 26, 2004. The protective cover was removed to allow access to the tower demister and spray nozzle. The demister pad was in good condition with no buildup of any material or precipitate. The spray nozzle was in good condition and did not require cleaning beyond a wipe down. The air stripper tower packing was inspected at the top of the column and determined to be in good condition. Packing was discolored, but no evidence of precipitate accumulation or clogging was observed.

2.3 Operating Measurements

2.3.1 Water Flow Measurements

Water flow measurements for wells RW-1D and RW-2D collected during monthly site visits are presented in **Table 3**, **Process Operating Report**. The totalizer readings collected at the site demonstate average recovery well water flow rates for the period of December 19, 2003 to June 30, 2004 are as follows:

Well RW-1D: 1.676 gpm
Well RW-2D: 1.619 gpm
System Avg: 3.295 gpm

Average daily water flow data as recorded by the on-site data logger are provided in **Appendix E**. Information obtained from the data logger indicates an average daily water flow rate of 3.254 gpm for the reporting period. The average water flow rate calculated from field observations (3.295) is very similar to the average daily water flow rate calculated from the data logger (3.254), confirming the data logger's accuracy and usefulness in verifying field observations.

2.3.2 Blower Air Pressure

Measurements of the air stripper blower back pressure were recorded on a weekly basis via RTU monitoring and during monthly O&M site visits. Readings collected during monthly O&M site visits from the pressure gauge installed to monitor the air stripper back pressure are provided in **Table 3**. Pressure readings ranged from 2.8 to 3.6 inches of water column during the current period. The pressure readings were well within the acceptable range of readings that are specified in the *Operation and Maintenance Manual, Remedial Work Element I, Drinking Water, IT Corporation, Inc., January 15, 2002*. Pressure readings will continue to be monitored in the future to ensure proper system performance.

2.4 Water Quality Data

2.4.1 Sample Collection

Samples of the drinking water system influent and effluent were collected on March 2 and May 25, 2004 and analyzed by Columbia Analytical Laboratories, Inc., Rochester, New York. Influent and effluent samples were analyzed for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method Contract Laboratory Program (CLP) OLC-02, modified to include hexachlorobutadiene, 1,2,3-trichlorobenzene and trichlorofluoromethane as summarized in **Table 4**.

The validated analytical results and chain of custody forms for the March 2 and May 25, 2004 samples are provided in **Appendix A**, respectively. All validation was performed by Data Validation Services, Incorporated of North Creek, New York. Validation reports are included in **Appendix D**.

In accordance with a previous request from the EPA and the NYSDOH, the May 25, 2004 air stripper influent sample was also analyzed for ammonium perchlorate according to EPA Method 314.0. An influent system sample will be collected and analyzed for ammonium perchlorate during the remaining ammonium perchlorate sampling event that is currently scheduled for August 2004.

2.4.2 VOC Analytical Results

The drinking water system effluent sampling results were non detectable for trichloroethene (TCE) and carbon tetrachloride for both monitoring events conducted during this reporting period. The influent concentrations for TCE and carbon tetrachloride observed during this reporting period were similar to the influent concentrations for these compounds observed during the previous reporting period. The drinking water system influent and effluent sample results for TCE and carbon tetrachloride are summarized in the table below.

Analyte	Date Sampled	Influent (µg/l)	Effluent (µg/l)	Performance Standard (µg/l)
Carbon Tetrachloride	March 2, 2004	9.4	< 1.0	5
	May 25, 2004	10.3	< 1.0	5
TCE	March 2, 2004	11.8	< 1.0	5
	May 25, 2004	13.7	< 1.0	5

Chloroform was detected in the air stripper influent sample collected during the March 2, 2004 and May 25, 2004 sampling events at estimated concentrations of 0.89 µg/l and 0.99 µg/l, respectively. The air stripper influent chloroform concentrations are similar to the chloroform air stripper influent concentrations observed during the previous reporting period. Chloroform was below detection limits in the air stripper effluent sample collected on March 2, 2004 and was observed at an estimated concentration of 0.13 µg/l from the air stripper effluent sample collected on May 25, 2004. The May 25, 2004 chloroform detections were edited by the data validator to non-detection at the contract required detection limit (CRDL) due to the presence of chloroform in the trip, method and cooler blanks. Ammonium perchlorate was not detected in the May 25, 2004 drinking water system effluent sample. The drinking water system influent and effluent sample results for chloroform and ammonium perchlorate are summarized below.

Analyte	Date Sampled	Influent (µg/l)	Effluent (µg/l)	Criteria (µg/l)
Chloroform	March 2, 2004	0.89J	ND	70
	May 25, 2004	ND	ND	70
Ammonium Perchlorate	March 2, 2004	NA	NA	4 to 18
	May 25, 2004	ND	NA	4 to 18

Note: NA = not analyzed.
ND = not detected

Based upon analytical data collected during this reporting period, the drinking water system's removal efficiency was greater than 99% for all volatile organic analytes.

3.0 O&M OF REMEDIAL WORK ELEMENT II (Groundwater)

3.1 Sample Collection

In accordance with the *Operations and Maintenance Manual for Remedial Work Element II - Ground Water, ERM Northeast, Inc., December 11, 1997, (O&M-GW),* unfiltered groundwater samples were collected on May 25, 2004 from the Early Warning Monitoring System (EWMS) monitoring wells DGC-3S, DGC-4S, 13S, M-27S, M-27D, M-33S, and M-33I and surface water sampling locations SW-A, SW-B, and SW-D (**Figure 1**). One blind duplicate sample (DUPA) from well M-27D and one trip blank were also obtained and analyzed.

With the exception of monitoring well 13S, samples from all monitoring wells and all surface water locations were analyzed for volatile organic compounds (VOCs) by USEPA Method OLC-02 by Columbia Analytical Services, Inc. in Rochester, New York. Samples from wells 13S, M-27S, and M-27D, and surface water location SW-B were also analyzed for unfiltered total matrix chromium following CLP procedures and unfiltered hexavalent chromium by SW-846 Method 7196 (*Test Methods for Evaluating Solid Waste*, 3rd Edition, November 1986).

Results of the May 2004 semi-annual EWMS sampling event are summarized in **Table 5**. The laboratory reports are presented in **Appendix B**. The data validation report is included in **Appendix D**. A summary of analytical results from 1987 through this reporting period for samples collected at locations currently included in the EWMS sampling program is provided in **Tables 6**, **7**, and **8**.

In accordance with the O&M-GW, time vs. concentration plots for hexavalent chromium at monitoring well 13S and carbon tetrachloride at monitoring well M-27D are included as **Figure 2** and **Figure 3,** respectively. **Figures 4, 5** and **6** include comparisons of simulated versus observed concentrations of carbon tetrachloride at monitoring well M-27D, TCE at monitoring well M-33S and TCE at monitoring well M-33I, respectively.

3.2 Chromium Analytical Results

Results of the unfiltered total chromium analyses collected at wells 13S, M-27S, M-27D and surface water location SW-B show concentrations of 20.1 µg/l, 83.1 µg/l, and 22.6 µg/l and 2.1 µg/l, respectively. The unfiltered total chromium concentration of 83.1 µg/l from well M-27-S

was the only result in exceedance of the New York State Ground Water Standard (NYSGWS) of 50 µg/l. Total chromium results from previous sample events at well M-27S range from non-detect in several sample events to 57.4 µg/l in November 1992.

With the exception of well 13S, analytical results showed no detectable concentrations of hexavalent chromium at the detection limit of 10 µg/l for all groundwater samples and surface water sample SW-B. Well 13S contained a hexavalent chromium concentration of 11 µg/l that was below the NYSGWS for hexavalent chromium of 50 µg/l. The attached time vs. concentration plot for unfiltered hexavalent chromium in well 13S is presented in **Figure 2**.

3.3 VOC Analytical Results

Carbon tetrachloride was detected in well M-27D at a concentration of 3 µg/l. With the exception of the sample from surface water sample SW-B, which indicated an estimated carbon tetrachloride concentration of 0.38 µg/l, all other water sample locations were non-detect for carbon tetrachloride during the reporting period. The result from SW-B was qualified by the laboratory and confirmed by the third party data validator as being estimated because the observed concentration was less than the method reporting limit. The time vs. concentration plot for carbon tetrachloride in well M-27D is presented in **Figure 3**.

Chloroform was detected in wells M-27D and M-27S and surface water location SW-B at estimated concentrations of 0.53 µg/l, 0.15 µg/l and 0.20 µg/l, respectively. However, these results were edited by the data validator to non-detection at the Contract Required Detection Limit (CRDL) due to the presence of chloroform in the trip, cooler and method blanks. Chloroform was not detected at the other sampling locations during this reporting period.

TCE and trichlorofluoromethane were detected in well M-27D at concentrations of 3.2 µg/l and 0.27 µg/l, respectively. The trichlorofluoromethane detection was qualified by the laboratory as being estimated because the observed concentration was less than the method reporting limit. TCE and trichlorofluoromethane were not detected at the remainder of the monitoring well locations during this reporting period.

No VOCs were detected in surface water samples SW-A, SW-B and SW-D during the May 2004 sampling event, with the exception of carbon tetrachloride and TCE in sample SW-B that contained estimated concentrations of 0.38 µg/l and 0.28 µg/l, respectively. These results are

similar to the concentrations observed during the previous reporting period.

Chloroform was detected in sample SW-B at an estimated concentration of 0.20 µg/l, however, this result was edited by the data validator to non-detection at the CRDL due to the presence of chloroform in the trip, cooler and method blanks.

3.4 Comparison of Observed VOC Concentrations to Simulation Results

Carbon tetrachloride and TCE concentrations detected during this monitoring period were compared to the results from the contaminant fate and transport modeling reported in Appendix A of the O&M-GW. The comparison was performed for carbon tetrachloride in monitoring well M-27D (**Figure 4**). As shown in **Figure 4**, the simulated carbon tetrachloride results are much higher than the observed concentrations. A comparison was also performed for TCE in monitoring well M-33S (**Figure 5**) and M-33I (**Figure 6**). As predicted by the simulations, there were no observed concentrations of TCE in monitoring wells M-33S and M-33I.

4.0 INSTITUTIONAL CONTROLS

O&M activities for remedial Work Element IV, Institutional Controls, are conducted on an annual basis. Shaw conducts semi-annual visual inspections of the environmental restriction zone during groundwater sampling activities and annual environmental easement restriction interviews with property owner representatives during the October semi-annual reporting period. With the exception of visual inspections of the environmental restriction zone, no institutional control activities were conducted during this reporting period. These activities will be conducted and reported during the next reporting period.

5.0 SUMMARY

5.1 Drinking Water

The drinking water treatment system is operating as intended and is meeting the performance standards for the MRFA site. The treatment equipment will continue to be monitored as necessary to ensure continued operation of all components and to maintain a reliable source of water for the Test Station. All of the effluent samples collected for performance monitoring and analyzed during the current period revealed concentrations below project discharge objectives.

5.2 EWMS

Based on the review of the analytical results from water samples collected during this reporting period, groundwater from the MRFA Site is not impacting the Luther Forest well field or the water supply wells located to the north of the Site. The analytical results from this reporting period are summarized as follows:

- Total chromium was detected at monitoring wells 13S, M-27S and M-27D, and surface water location SW-B. Each of the total chromium detections were below the NYSGWS of 50 µg/l with the exception of M-27S (83.1 µg/l).
- With the exception of monitoring well 13S, hexavalent chromium was not detected at the monitoring wells or surface water location. The detection of 11 µg/l at 13S was below the NYSGWS of 50 µg/l.
- With the exception of monitoring well M-27D with a concentration of 3 µg/l and surface water location SW-B with an estimated concentration of 0.38 µg/l, carbon tetrachloride was not detected or was present below the method reporting limit at all of the wells and surface water locations. The carbon tetrachloride detections at well M-27D and surface water location SW-B were below the NYSGWS of 5 µg/l.
- Chloroform was not detected at any of the wells or surface water locations with the exception of estimated detections at well M-27D (0.53 µg/l), well M-27S (0.15 µg/l) and surface water location SW-B (0.20 µg/l). However, the detections were edited by the data validator to non-detection at the CRDL due to the presence of chloroform in the trip, cooler and method blanks.
- TCE was not detected at any of the wells or surface water locations, with the exception of well M-27D (3.2 µg/l) and surface water location SW-B (estimated concentration of 0.28 µg/l that was below the method reporting limit). Trichlorofluoromethane was not detected at any of the wells or surface water locations with the exception of well M-27D with an estimated concentration of 0.27 µg/l that was below the method reporting limit.

The NYSGWS for both TCE and trichlorofluoromethane is 5 µg/l.

- As shown in **Figures 4, 5** and **6**, simulated concentrations of carbon tetrachloride and TCE are much higher than the observed concentrations.

TABLES

TABLE 1
MAINTENANCE CHECKLIST
OPERATION AND MAINTENANCE PLAN
TEST STATION WATER SUPPLY AND TREATMENT SYSTEM
MALTA ROCKET FUEL AREA SITE

Equipment Name	Item	Action	Frequency	Comments
Well Pump 1D	Pump bowls	Check for signs of iron fouling & impeller wear	Annually	More frequently as problems occur
Well Pump 2D	Pump bowls	Check for signs of iron fouling & impeller wear	Annually	More frequently as problems occur
Control Valves	Miscellaneous	Inspect for leaks	Monthly	Exercise valves annually
Air Stripper Sight Tube		Inspect for siltation and biofouling	Monthly	Adjust frequency depending on operating experience
Air Stripper Spray Nozzle		Inspect for fouling	Annually	No required routine maintenance
Air Stripper Blower	Intake	Inspect and clean	Monthly	Adjust frequency depending on operating experience
Air Stripper Blower	Motor & bearings	Check and lubricate	Annually	More frequently as problems occur
Air Stripper Unit	Packing	Clean or replace	Every 5 years	Adjust frequency depending on operating experience

TABLE 1
MAINTENANCE CHECKLIST
OPERATION AND MAINTENANCE PLAN
TEST STATION WATER SUPPLY AND TREATMENT SYSTEM
MALTA ROCKET FUEL AREA SITE

Equipment Name	Item	Action	Frequency	Comments
Mist Eliminator	Mesh screen	Clean or replace	Annually	Adjust frequency depending on operating experience
Settling Tank		Inspect for siltation	Monthly	Adjust frequency depending on operating experience
Settling Tank High Level Float Switch		Check operation	Monthly	Replace float switch every 5 years
100K Gallon Reservoir		Inspect for siltation, debris, etc.	Annually	Adjust frequency depending on operating experience
Level Sensor	Probe	Manually check start-up/shutdown. Check probe float for free range of motion. Remove and inspect for buildup of minerals if resistance is detected.	Monthly	Adjust frequency depending on operating experience
Misc. Guys, Hardware etc.		Inspect	Annually	Adjust frequency depending on operating experience
System Interlocks	Settling Tank High Level Blower Low Pressure Blower Low Amps Building Low Temperature	Check for proper operation. System should alarm after pre-set delay period.	Monthly	Adjust frequency depending on operating experience

TABLE 2
EQUIPMENT LOG,
AIR STRIPPER MAINTENANCE
MALTA ROCKET FUEL AREA SITE

Date	Operator	Operational Status of System	Work Performed
1/20/2004	Brian Neumann	OK	System operational upon arrival. Inspected all system process lines and tested operation of all system alarms and interlocks - all are operating properly. No problems were noted.
1/22/04	John Skaarup & Robert Hyde	OK	Performed entry in RW-1D and RW-2D well vaults to adjust system flow rate. Total instantaneous flow rate reduced to approximately 14 gpm.
2/26/2004	John Skaarup & Christine Vooris	OK	System operational upon arrival. Inspected system process piping and valves. Tested operation of all system alarms and interlocks - all are operating properly. AS blower motor sounds abnormal, was inspected to determine need for replacement. Will return to complete inspection.
2/27/04	John Skaarup	Not Operational	System shut down pending potential replacement of blower motor.
3/1/04	John Skaarup & Robert Hyde	Not Operational	Restarted system to troubleshoot blower motor. Motor electrical OK. Arbor appears to be damaged. Ordered new blower motor. Shut down system prior to departure.
3/2/04	John Skaarup & Robert Hyde	OK	Replace blower motor. Restart system, observed operation – all OK. Collect quarterly performance samples. System operational upon departure.
3/29/2004	John Skaarup	OK	System operational upon arrival. Inspected system process piping and valves. Tested system interlocks – all OK. Made minor adjustment to well flow control valves. Total system influent flow rate is now 12.5 gpm.
4/29/2004	John Skaarup	OK	System operational upon arrival. Reservoir at normal level. Control valves and piping in good visual condition. Checked system interlocks – all OK. Checked air stripper blower intake. Collected coliform sample per NYSDOH requirements.
5/25/2004	Brian Neumann & Mike Puglisi	OK	System operational upon arrival. Inspected system process piping and valves. Tested operation of all system alarms and interlocks - all are operating properly. Collected quarterly performance samples, ammonium perchlorate sample and NYSDOH samples.
6/30/2004	John Skaarup & Brian Neumann	OK	System operational upon arrival. Collected coliform samples from AS influent, AS effluent, settling tank and W-M men's wash room sink per NYSDOH requirements. Replaced RTU expansion module due to recent malfunction in remote reporting of 2 inputs. Tested operation of all system alarms and interlocks - all are operating properly.

TABLE 3
PROCESS OPERATING REPORT
WATER TREATMENT SYSTEM
MALTA ROCKET FUEL AREA SITE

1	2	3					4					5
DATE	TIME	WATER FLOW --LINE 1D					WATER FLOW --LINE 2D					PROBLEMS OR COMMENTS
		1D LINE FLOW METER RDG(GPM)	1D LINE TOTALIZER RDG(GAL)	ELAPSED TIME (DAYS)	TOTAL FLOW THIS PERIOD (GAL)	AVG FLOW THIS PERIOD (GPM)	2D LINE FLOW METER RDG(GPM)	2D LINE TOTALIZER RDG(GAL)	ELAPSED TIME (DAYS)	TOTAL FLOW THIS PERIOD (GAL)	AVG FLOW THIS PERIOD (GPM)	
1/20/2004	12:15	12	2096100	33	56,400	1.19	12	2,048,700	33	52,400	1.10	
2/26/2004	10:00	6.9	2,150,100	37	54,000	1.01	7.4	2,110,300	37	61,600	1.16	
3/29/2004	9:50	7	2,193,600	32	43,500	0.94	7.5	2,158,100	32	47,800	1.04	
4/29/2004	15:00	6.0	2,256,600	31	63,000	1.41	5.4	2,215,400	31	57,300	1.28	
5/25/2004	8:05	5.0	2,322,200	26	65,600	1.75	5.0	2,284,100	26	68,700	1.83	
6/30/2004	11:45	6.3	2,510,500	36	188,300	3.63	5.2	2,451,100	36	167,000	3.22	
Summary				195	470,800	1.6766			195	454,800	1.6197	

NR = Not Recorded
NA = Not Applicable

TABLE 3
PROCESS OPERATING REPORT
WATER TREATMENT SYSTEM
MALTA ROCKET FUEL AREA SITE

1	2	3			4	5
DATE	TIME	STANDPIPE LEVEL (FT)	LEVEL PROBE OK ?	SAMPLES TAKEN ?	AIR BLOWER PRESSURE OK?	PROBLEMS OR COMMENTS
1/20/2004	12:15	12.75-12.85	Yes	No	Yes-3.25	Bypass valve tightened; small leak prior.
2/26/2004	10:00	12.75	Yes	Yes	Yes-3.60	System OK except blower motor-sounds abnormal. Inspected for signs of wear. Need further inspection to determine need for replacement.
3/29/2004	9:50	12.75	Yes	No	Yes-3.60	System OK.
4/29/2004	15:00	12.75	Yes	Yes	Yes-3.20	Collected coliform sample from system influent port.
5/25/2004	8:05	12.75	Yes	Yes	Yes-3.0	Collected system samples including VOCs from influent and effluent, also collected ammonium perchlorate influent sample and NYSDOH samples from effluent.
6/30/2004	11:45	10.75	Yes	Yes	Yes-2.8	System OK except RTU outputs for blower air velocity and pressure. Will investigate. Collected coliform samples from influent, effluent, settling tank and men's wash room sink.

TABLE 4
SUMMARY OF DRINKING WATER SAMPLING PROGRAM, PRESERVATIVES, HOLDING TIMES AND CONTAINERS
MALTA ROCKET FUEL AREA SITE

Sample	Sampling Frequency	Sample Matrix	Analytical Parameters	Analytical Method Reference[1]	Sample Preservation	Holding Times[2]	Containers
Influent	1 per quarter	Water	CLP OLC VOCs	USEPA CLP OLCO2	Hcl, Cool, <4°C	14 days	3 - 40 ml glass vials with teflon septa and plastic screw caps
Effluent	1 per quarter	Water	CLP OLC VOCs	USEPA CLP OLCO2	Hcl, Cool, <4°C	14 days	3 - 40 ml glass vials with teflon septa and plastic screw caps

Notes:

1. *USEPA CLP OLCO2 analysis modified to include hexachlorobutadiene, 1,2,3 trichlorobenzene and trichlorofluoromethane to match the EWMS ground water analyses.*
2. *Holding times begin at the time of sample collection.*

TABLE 5
MAY 2004 WATER QUALITY ANALYTICAL RESULTS
SEMI-ANNUAL SAMPLING

Compound	Remedial Action Objective	DGC-3S	DGC-4S	13S	M-27S	DUPA (27D)	M-27D	M-33S	M-33I	Trip Blank 1
Acetone	50	5.0 UJ	5.0 UJ	NA	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Carbon Disulfide	None*	1.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	1.0 U	1.0 U	NA	0.10 J	2.7	3	1.0 U	1.0 U	1.0 U
Chloroform	7	1.0 U	1.0 U	NA	0.15 JBU	0.55 JBU	0.53 JBU	1.0 U	1.0 U	0.16 JB
2-Butanone	5	5.0 UJ	5.0 UJ	NA	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Trichloroethene	5	1.0 U	1.0 U	NA	1.0 U	2.9	3.2	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	5*	1.0 U	1.0 U	NA	1.0 U	0.29 J	0.27 J	1.0 U	1.0 U	1.0 U
Chromium	50*	NA	NA	21.1	83.1	21.3	22.6	NA	NA	NA
Hexavalent Chromium	50*	NA	NA	11J	10 UJ	10 UJ	10 UJ	NA	NA	NA
Field Parameters										
pH	-	5.78	7.61	8.41	-	-	-	8.24	10.69	-
Temperature (celsius)	-	11.57	9.72	10.81	9.97	9.61	9.61	8.49	9.89	-
Conductivity (umhos/cm)	-	0.075	0.258	0.384	0.245	0.27	0.27	0.16	0.17	-
Dissolved Oxygen	-	8.32	7.81	10.3	10.98	5.71	5.71	8.36	8.91	-
Turbidity (NTUs)	-	139.3	50.2	8.7	96.6	7.9	7.9	15.5	5.3	-
Depth To Water (feet)	-	16.85	7.31	33.51	40.96	-	40.05	16.85	32.59	-
Ground Water Elevation (feet)	-	188.95	198.49	295.4	282.14	-	264.22	287.42	271.10	-

Notes:

1. All analytical concentrations are in µg/l (micrograms per liter (ppb)).
2. Only compounds detected at one or more sampling points are listed.
3. NA - not analyzed for.
4. U - analyte was not detected, and value shown is the detection limit.
5. J - estimated value due to data validation requirements or concentration less than CRQL (organics only).
6. B - The reported value is less than the CRDL but greater than the IDL (inorganics only).

* Based on NYSDEC Final Combined Regulatory Impact and Environmental Impact Statement (Title 6, Chapter X, Parts 700-706, 1998), identified for comparison purposes only.

7. D - Indentifies all compounds analyzed at a secondary dilution factor.
8. NM - Not measured due to equipment malfunction.

TABLE 5
MAY 2004 WATER QUALITY ANALYTICAL RESULTS
SEMI-ANNUAL SAMPLING

Parameter	Remedial Action Objective	SW-A	SW-B	SW-D
Acetone	50	5.0 UJ	5.0 UJ	5.0 UJ
Carbon Disulfide	None*	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	1.0 U	0.38 J	1.0 U
Chloroform	7	1.0 U	0.20 JU	1.0 U
2-Butanone	5	5.0 UJ	5.0 UJ	5.0 UJ
Trichloroethene	5	1.0 U	0.28 J	1.0 U
Chromium	50*	NA	2.1 B	NA
Hexavalent Chromium	50*	NA	10 UJ	NA
Field Parameters				
pH	-	8.24	8.03	7.99
Temperature (celsius)	-	10.20	13.70	11.01
Conductivity (umhos/cm)	-	0.262	0.281	0.238
Dissolved Oxygen	-	11.28	12.19	14.11
Turbidity (NTUs)	-	2.2	10.50	3.3
Depth To Water (feet)	-	-	-	-
Ground Water Elevation (feet)	-	-	-	-

Notes:
1. All analytical concentrations are in µg/l (micrograms per liter (ppb)).
2. Only parameters detected in one or more sampling points are listed.
3. NA - not analyzed for.
4. U - analyte was not detected, and value shown was the detection limit.
5. J - estimated value due to data validation requirements or concentration less than CRQL (organics only).
6. B - The reported value is less than the CRDL but greater than the IDL (inorganics only).

* Based on NYSDEC Final Combined Regulatory Impact and Environmental Impact Statement (Title 6, Chapter X, Parts 700-706, 1998), identified for comparison purposes only.

7. NM - Not measured due to equipment malfunction.

TABLE 6
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS DGC-3S, DGC-4S, 13S
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Wells / Compounds DGC-3S	Remedial Action Objective	6/29-7/1/1987	7/31/87	11/5/87	1/19-1/20/1988	4/18-4/19/1988	7/20-7/21/1988	10/11-10/12/88	1/19-1/20/89
Benzene	0.7*	ND	NA	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	NA	ND	ND	ND	ND	ND	NA
Aluminum	100*	0.48	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	<0.005 mg/L	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium	50*	no data	no data	no data	no data	no data	no data	no data	no data
DGC-4S									
Carbon Disulfide	None*	- -	- -	- -	- -	- -	- -	- -	- -
Chromium	50*	- -	- -	- -	- -	- -	- -	- -	- -
13S									
Benzene	0.7*	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	None*	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	5*	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Units are µg/l (ppb) unless otherwise stated.
Only detected compounds are listed.
NA = Not analyzed.
ND = Not detected.
B = The reported value is less than the CRQL/CRDL but greater than the IDL.
dp = Duplicate sample.
E = Estimated concentration: due to interference.
D = Concentration determined from a sample dilution.
J = Estimated concentration.
V = Estimated concentration: due to variance to quality control limits.
- - = Not sampled: well installed in December, 1990.
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** = Filtered Sample.

TABLE 6
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS DGC-3S, DGC-4S, 13S
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Wells / Compounds	Remedial Action								
DGC-3S	**Objective**	**4/10/89**	**7/12/89**	**8/15/1989**	**11/30/1989**	**5/30/90**	**8/28/90**	**12/6/90**	**4/8-4/10/1991**
Benzene	0.7*	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	NA	8 V / 7 Vdp
Aluminum	100*	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium	50*	no data	no data	no data	no data	NA	NA	NA	NA
DGC-4S									
Carbon Disulfide	None*	- -	- -	- -	- -	- -	- -	- -	ND/0.5Vdp
Chromium	50*	- -	- -	- -	- -	- -	- -	- -	NA
13S									
Benzene	0.7*	NA	NA	NA	NA	NA	NA	NA	2
Carbon Disulfide	None*	NA	NA	NA	NA	NA	NA	NA	60 D
Carbon Tetrachloride	5	NA	NA	NA	NA	18/16 dp	6.4	4.4	8
Chloroform	7	NA	NA	NA	NA	ND	ND	ND	ND
Trichloroethene	5	NA	NA	NA	NA	ND	ND	ND	ND
Trichlorofluoromethane	5*	NA	NA	NA	NA	ND	ND	ND	ND
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	336 V
Hexavalent Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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Only detected compounds are listed.

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ND = Not detected.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

dp = Duplicate sample.

E = Estimated concentration: due to interference.

D = Concentration determined from a sample dilution.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

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TABLE 6
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS DGC-3S, DGC-4S, 13S
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Wells / Compounds	Remedial Action	6/12-	9/23-	12/26-	2/10-	6/1-	9/28-	11/18-	3/17-
DGC-3S	**Objective**	**6/13/1991**	**9/24/1991**	**12/27/91**	**2/11/92**	**6/2/1992**	**9/29/1992**	**11/19/1992**	**3/18/1993**
Benzene	0.7*	ND	0.2 J	ND	ND/NDdp	ND	ND	ND	ND
Carbon Disulfide	None*	4	ND	ND	ND/NDdp	ND	ND	ND	ND
Aluminum	100*	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	6.1	62.2E/70.3Edp	16.2/ND*, 14.6/ND*dp	25.2/ND*	ND	33.6/ND*	18.5
Hexavalent Chromium	50*	NA	NA	NA	ND/4*/ND dp	NA	NA	NA	NA
DGC-4S									
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND/ND dp	4 V	ND
Chromium	50*	NA	15.9	11.9 E	ND/ND*	ND/ND*	ND/ND dp	8.6 B	48.1/ND*
13S									
Benzene	0.7*	0.7/0.6 Jdp	1	ND	ND	ND	ND	0.4 JV	ND
Carbon Disulfide	None*	0.6	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	24 J/24 Jdp	8	12	9	6 J	9	16 V	15
Chloroform	7	0.8/0.9 Jdp	ND	0.4 J	0.3 J	ND	ND	0.6 V	0.6
Trichloroethene	5	ND	0.4 J	0.9	0.6	ND	0.6	1 V	2
Trichlorofluoromethane	5*	ND	ND	ND	ND	ND	0.5	0.9 V	2
Chromium	50*	NA	269/261**	316 E/562 E**	282/498**	504/512**	179/172**	585/576**	746/614**
Hexavalent Chromium	50*	NA	280	486/302**	260/310**	NA	287	493	663

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

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dp = Duplicate sample.

E = Estimated concentration: due to interference.

D = Concentration determined from a sample dilution.

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TABLE 6
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS DGC-3S, DGC-4S, 13S
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Wells / Compounds	Remedial Action	5/25-	8/24-	11/8-	2/22-	5/18-	8/24-	11/15-	
DGC-3S	**Objective**	**5/26/1993**	**8/25/1993**	**11/9/1993**	**2/23/1994**	**5/19/1994**	**8/25/1994**	**11/16/1994**	**5/23/1995**
Benzene	0.7*	ND	ND	ND	ND	ND V	ND	ND	ND
Carbon Disulfide	None*	ND	0.8	ND	ND	ND V	ND	ND	ND
Aluminum	100*	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	4.3 B	4.7B	19.4	23.9	4.5 B	9.9 B	11.1	NA
Hexavalent Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
DGC-4S									
Carbon Disulfide	None*	0.3 J	0.2J	ND	ND	ND V/ND V dp	ND	ND	ND
Chromium	50*	ND	3.3B	ND	31.2/ND*	ND/ND dp	5.6 B	ND	NA
13S									
Benzene	0.7*	ND	ND	ND	ND/ND dp	ND	ND	ND	NA
Carbon Disulfide	None*	ND	ND	ND	ND/ND dp	ND	ND	ND	NA
Carbon Tetrachloride	5	10	17	18	20/9 dp	9	9	9	NA
Chloroform	7	0.4 J	0.6	0.7	ND/ND dp	0.4 J	0.3 J	ND	NA
Trichloroethene	5	0.6	ND	2	2/1 dp	0.8	1	0.9	NA
Trichlorofluoromethane	5*	0.5	ND	2	2/1 dp	0.9	1	ND	NA
Chromium	50*	198/609**	787/716**	572/610**	580/357** 567/357** dp	406/434**	133 V/157 V**	44.2 V/95.8 V**	140 J
Hexavalent Chromium	50*	460	800	560	530/540 dp	340	101	36	150

Notes:

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Only detected compounds are listed.

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TABLE 6
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS DGC-3S, DGC-4S, 13S
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Wells / Compounds	Remedial Action								
DGC-3S	**Objective**	**10/17/1995**	**5/14/1996**	**10/23/1996**	**6/2/1997**	**10/14/1997**	**5/28/1998**	**10/29/1998**	**5/11/1999**
Benzene	0.7*	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	100*	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
DGC-4S									
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA
13S									
Benzene	0.7*	NA	NA	NA	1U	1U	NA	NA	NA
Carbon Disulfide	None*	NA	NA	NA	1U	1U	NA	NA	NA
Carbon Tetrachloride	5	NA	NA	NA	1U	8	NA	NA	NA
Chloroform	7	NA	NA	NA	1U	1U	NA	NA	NA
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	5*	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	52.7 J	44.8	46.4	90.7/90.9**	71.4	71.2	98.6 J	72.4
Hexavalent Chromium	50*	48	47	47	97	67	51	54.0 J	71.0

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

dp = Duplicate sample.

E = Estimated concentration: due to interference.

D = Concentration determined from a sample dilution.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

- - = Not sampled: well installed in December, 1990.

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** = Filtered Sample.

TABLE 6
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS DGC-3S, DGC-4S, 13S
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Wells / Compounds DGC-3S	Remedial Action Objective	10/26/1999	5/22/2000	10/24/2000	5/15/2001	10/23/2001	5/29/2002	10/29/2002	4/9/2003	10/9/2003	5/25/2004
Benzene	0.7*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	100*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexavalent Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DGC-4S											
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13S											
Benzene	0.7*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	None*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	5*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	169	249	29.9	136	43.3	13.4	34.8	52.2	49.4	20.1
Hexavalent Chromium	50*	178	262	41	12.3	43.6 J	18	3.59	45	51.5	11

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

dp = Duplicate sample.

E = Estimated concentration: due to interference.

D = Concentration determined from a sample dilution.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

- - = Not sampled: well installed in December, 1990.

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** = Filtered Sample.

TABLE 7
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS M-27, M-27D, M-33S, M-33I
JUNE 1992 - MAY 2004
SEMI-ANNUAL SAMPLING

M-27S	Remedial Action Objective	6/5/1992	11/11/1992	3/14/1994	5/23/1995	10/17/1995	5/14/1996	10/23/1996	6/2/1997	10/14/1997
Carbon Disulfide	None*	ND	ND	not sampled	ND	ND	ND	ND	ND	ND
Chloromethane	5	40	ND	not sampled	ND	ND	ND	ND	ND	ND
Chromium	50*	8.4 B/ND**	57.4/ND**	not sampled	ND	ND	ND	ND	ND	ND
Hexavalent Chromium	50*	NA	NA	not sampled	ND	ND	ND	ND	ND	ND
M-27D										
Carbon Tetrachloride	5	75/62 dp	23	not sampled	33/42 dp	56	31	28	26	22
Chloroform	7	ND	3	not sampled	4/4 dp	5	3	3	3	2
Chloromethane	5	4 J/28 dp	ND	not sampled	ND/ND dp	ND	ND	ND	ND	ND
Trichloroethene	5									
Trichlorofluoromethane	5*	no data	no data	not sampled	no data	no data	no data	no data	no data	no data
Chromium	50*	2.0 B/ND** 2.0 B/ND** dp	19.8/ND**	not sampled	ND/ND dp	ND	ND	ND	ND	1.2B
Hexavalent Chromium	50*	NA	NA	not sampled	ND/ND dp	ND	ND	ND	ND	ND
M-33S										
VOCs	-	not sampled	not sampled	ND	ND	ND	ND	ND	ND	ND
M-33I										
VOCs	-	not sampled	not sampled	ND	ND	ND	ND	ND	ND	ND

Notes:

Units are ug/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

J = Estimated concentration.

dp = Duplicate sample.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

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TABLE 7
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
MONITORING WELLS M-27, M-27D, M-33S, M-33I
JUNE 1992 - MAY 2004
SEMI-ANNUAL SAMPLING

M-27S	Remedial Action Objective	5/28/1998	10/29/1998	5/11/1999	10/26/1999	5/22/2000	10/24/2000	5/15/2001	10/23/2001	5/29/2002	10/29/2002	4/15/2003	10/9/2003	5/25/2004
Carbon Disulfide	None*	ND	ND	0.85 J	ND / ND dp	ND	ND	ND / ND dp	ND / ND dp	ND / ND dp	ND J / ND J dp	ND	ND / 0.11 J dp	ND
Chloromethane	5	ND	ND	ND	ND / ND dp	ND	ND	ND / ND dp	ND / ND dp	ND / ND dp	ND J / ND J dp	ND	ND / ND dp	ND
Chromium	50*	ND	3.2 BJ	0.98B	0.85B/0.90b dp	1.1B	1.2B	ND / ND dp	ND / ND dp	ND / ND dp	1.2 B	8.5 B	1.0 B / 1.8 B dp	83.1
Hexavalent Chromium	50*	ND	ND	ND	ND / ND dp	ND	ND	ND / ND dp	ND / ND dp	ND / ND dp	ND / ND dp	ND UJ	ND U / ND dp	ND
M-27D														
Carbon Tetrachloride	5	27	26 / 27 dp	20.3 / 20.1 dp	22.3	26.7D/28.9D dp	19.2/19.8 dp	13.8	16.2	14.5	24.2 DJ	5.1 / 4.5 dp	16.6	3 / 2.7 dp
Chloroform	7	3	2 / 2 dp	1.8 / 1.8 dp	1.8	ND / ND dp	1.7J /1.3 dp	1.1	1.1	0.94J	2.4	ND / ND dp	1.0	0.53 JB / 0.55 JB dp
Chloromethane	5	ND	ND / ND	ND / ND dp	ND	ND / ND dp	ND / ND dp	ND	ND	ND	ND	ND ND dp	ND	ND ND dp
Trichloroethene	5		ND/ND dp	4.1/4.1 dp	10.7	12.8 / 12.1 dp	26.4 /26.5D dp	19.4	27 D	22.7	14	2.4 / 2.2 dp	21.8 D	3.2 / 2.9 dp
Trichlorofluoromethane	5*	no data	0.3 J / 0.3 J dp	0.92J / 0.99J dp	1.4	1.9 / 1.8 dp	2.9 / 2.9 dp	2.0	2.2	1.5	0.96 J	0.21J / 0.18J dp	2.3	0.27 J / 0.29 J dp
Chromium	50*	ND	4.6 BJ / 4.8 BJ dp	1.4 B / 1.3 B dp	0.81B	2B/1.8B dp	1.2B/1.2B dp	ND	1.5 B	2 B	1.5 B	5.9B / 6.1B dp	1.2 B	22.6 / 21.3 dp
Hexavalent Chromium	50*	ND	ND / ND dp	ND / ND dp	ND	ND/ND dp	ND/ND dp	ND	ND	ND	ND	ND / ND dp	ND	ND / ND dp
M-33S														
VOCs	-	ND	ND	ND	ND	ND	ND	8.0 J	ND	ND	ND	ND	ND	ND
M-33I														
VOCs	-	ND	ND	ND	ND	ND	ND	4.1 J	ND	ND	ND	ND	ND	ND

Notes:

Units are ug/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

J = Estimated concentration.

dp = Duplicate sample.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

D = Indentifies compound analyzed at a secondary dilution factor.

* Based on NYSDEC Final Combined Regulatory Impact and Environmental Impact Statement (Title 6, Chapter X, Parts 700-706, 1998), identified for comparison purposes only.

** = Filtered Sample.

TABLE 8
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
SURFACE WATER
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Surface Water Points / Compounds	Cleanup	6/29-			1/19-	4/18-	7/20-	10/11-	1/19-		
SW-A	**Standard**	**7/1/1987**	**7/31/87**	**11/5/87**	**1/20/1988**	**4/19/1988**	**7/21/1988**	**10/12/88**	**1/20/89**	**4/10/89**	**7/12/89**
Carbon Disulfide	None*	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA
Aluminum	100*	0.12 mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	0.02 mg/L	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-B											
Carbon Disulfide	None*	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA
Carbon Tetrachloride	5	ND	NA	ND	ND	ND	ND	ND	1.1/1.1dp	ND	ND
Chloroform	7	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Aluminum	100*	0.21 mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	<0.01 mg/L	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-D											
Acetone	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Bromochloromethane	5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	NA	ND	ND	ND	ND	ND	NA	NA	NA
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Methylene Chloride	5*	ND	ND	0.5	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Aluminum	100*	0.50 mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	NA	NA	NA	NA	<0.005 mg/L	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

dp = Duplicate sample.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

D = Concentration determined from a sample dilution.

E = Estimated concentration : due to interference.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

R = Rejected during data validation.

* Based on NYSDEC Final Combined Regulatory Impact and Environmental Impact Statement (Title 6, Chapter X, Parts 700-706, 1998), identified for comparison purposes only.

** = Filtered Sample.

TABLE 8
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
SURFACE WATER
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Surface Water Points / Compounds	Cleanup								4/8-	6/12-	9/23-	12/26-	2/10-	6/1-	9/28-	11/18-
SW-A	**Standard**	**8/15/1989**	**11/30/1989**	**12/27/1989**	**2/22/1990**	**5/30/90**	**8/28/90**	**12/6/90**	**4/10/1991**	**6/13/1991**	**9/24/1991**	**12/27/91**	**2/11/92**	**6/2/1992**	**9/29/1992**	**11/19/1992**
Carbon Disulfide	None*	NA	NA	NA	NA	NA	NA	NA	0.5 V	ND	ND	ND	ND	ND	ND	ND
Aluminum	100*	NA	NA	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Lead	25*	NA	NA	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.6	ND	ND	ND	ND	ND
SW-B																
Carbon Disulfide	None*	NA	NA	NA	NA	NA	NA	NA	ND	0.2 J	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	0.9	NA	0.88	ND	ND	1	0.4 J	0.6 J	0.4 J	0.8	0.8	0.7	0.3 J	0.6 V
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	0.2 J	ND	ND	ND	0.2 J	ND	ND
Trichloroethene	5	ND	ND	ND	ND	ND	ND	ND	ND	0.3 J	ND	0.2 J	ND	0.3 J	ND	ND
Trichlorofluoromethane	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	ND	ND
Aluminum	100*	NA	NA	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Lead	25*	NA	NA	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
SW-D																
Acetone	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Bromochloromethane	5*	ND	1.7, ND dp	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	ND	ND
Carbon Disulfide	None*	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	no data	no data
1,2-Dichloroethane	0.6*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	ND	ND
Methylene Chloride	5*	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	6.3 BE	ND	ND	no data	no data
1,2,3-Trichlorobenzene	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Aluminum	100*	NA	NA	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Lead	25*	NA	NA	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	ND	2	ND	ND	ND	ND	ND	ND

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

dp = Duplicate sample.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

D = Concentration determined from a sample dilution.

E = Estimated concentration : due to interference.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

R = Rejected during data validation.

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** = Filtered Sample.

TABLE 8
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
SURFACE WATER
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Surface Water Points / Compounds	Cleanup	3/17-	5/25-	8/24-	11/8-	2/22-	5/18-	8/24-	11/15-			
SW-A	**Standard**	**3/18/1993**	**5/26/1993**	**8/25/1993**	**11/9/1993**	**2/23/1994**	**5/19/1994**	**8/25/1994**	**11/16/1994**	**5/23/1995**	**10/17/1995**	**5/14/1996**
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	100*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Lead	25*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Chromium	50*	6.1 B	ND	3.2B	ND	ND	ND	ND	ND	NA	NA	NA
SW-B												
Carbon Disulfide	None*	ND	ND	ND	ND	ND/ND dp	ND	ND	ND	ND	ND/ND dp	ND
Carbon Tetrachloride	5	ND	ND	0.3 J	0.7	0.4 J/0.4 J dp	0.4 J	0.2 JV	ND	ND	0.7 J/0.6 J dp	ND
Chloroform	7	ND	ND	ND	0.3 J	ND/ND dp	ND	ND	ND	ND	ND/ND dp	ND
Trichloroethene	5	ND	ND	ND	0.2 J	ND/ND dp	ND	ND	ND	ND	ND/ND dp	ND
Trichlorofluoromethane	5*	2	ND	ND	ND	ND/ND dp	ND	ND V	ND	ND	ND/ND dp	ND
Aluminum	100*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Lead	25*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Chromium	50*	ND	ND	ND	ND	ND/ND dp	ND	ND	ND	ND	ND/ND dp	ND
SW-D												
Acetone	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Bromochloromethane	5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	ND
1,2-Dichloroethane	0.6*	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND
Methylene Chloride	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	ND
1,2,3-Trichlorobenzene	5*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Aluminum	100*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Lead	25*	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data	no data
Chromium	50*	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

dp = Duplicate sample.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

D = Concentration determined from a sample dilution.

E = Estimated concentration : due to interference.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

R = Rejected during data validation.

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** = Filtered Sample.

TABLE 8
SUMMARY OF WATER QUALITY ANALYTICAL RESULTS
SURFACE WATER
JUNE 1987 - MAY 2004
SEMI-ANNUAL SAMPLING

Surface Water Points / Compounds	Cleanup																
SW-A	**Standard**	**10/23/1996**	**6/2/1997**	**10/14/1997**	**5/28/1998**	**10/29/1998**	**5/11/1999**	**10/26/1999**	**5/22/2000**	**10/24/2000**	**5/15/2001**	**10/23/2001**	**5/29/2002**	**10/29/2002**	**4/9/2003**	**10/9/2003**	**5/25/2004**
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND J	ND	ND	ND
Aluminum	100*	no data	no data	no data	no data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	no data	no data	no data	no data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SW-B																	
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	0.6J	ND	ND	0.3J	ND	ND	ND	ND	0.54J	ND	ND	ND	0.18 J	0.34 J	0.27 J	0.38 J
Chloroform	7	ND	ND	ND	0.1J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20 J
Trichloroethene	5	ND	ND	ND	0.2J	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.20 J	0.19 J	0.28 J
Trichlorofluoromethane	5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	100*	no data	no data	no data	no data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	no data	no data	no data	no data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	ND	NA	ND	ND	3.1 BJ	0.44 B	ND	0.9B	0.75B	ND	ND	1.5 B	0.93 B	1 B	0.75 B	2.1 B
SW-D																	
Acetone	5*	no data	no data	no data	43 J	R	ND	ND	ND	ND	ND	ND	ND	3.1 J	ND	ND	ND
Bromochloromethane	5*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	None*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	5	ND	no data	no data	ND	0.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5*	ND	no data	no data	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	5*	no data	no data	no data	0.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	100*	no data	no data	no data	no data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	25*	no data	no data	no data	no data	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	50*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Units are µg/l (ppb) unless otherwise stated.

Only detected compounds are listed.

NA = Not analyzed.

ND = Not detected.

dp = Duplicate sample.

B = The reported value is less than the CRQL/CRDL but greater than the IDL.

D = Concentration determined from a sample dilution.

E = Estimated concentration : due to interference.

J = Estimated concentration.

V = Estimated concentration: due to variance to quality control limits.

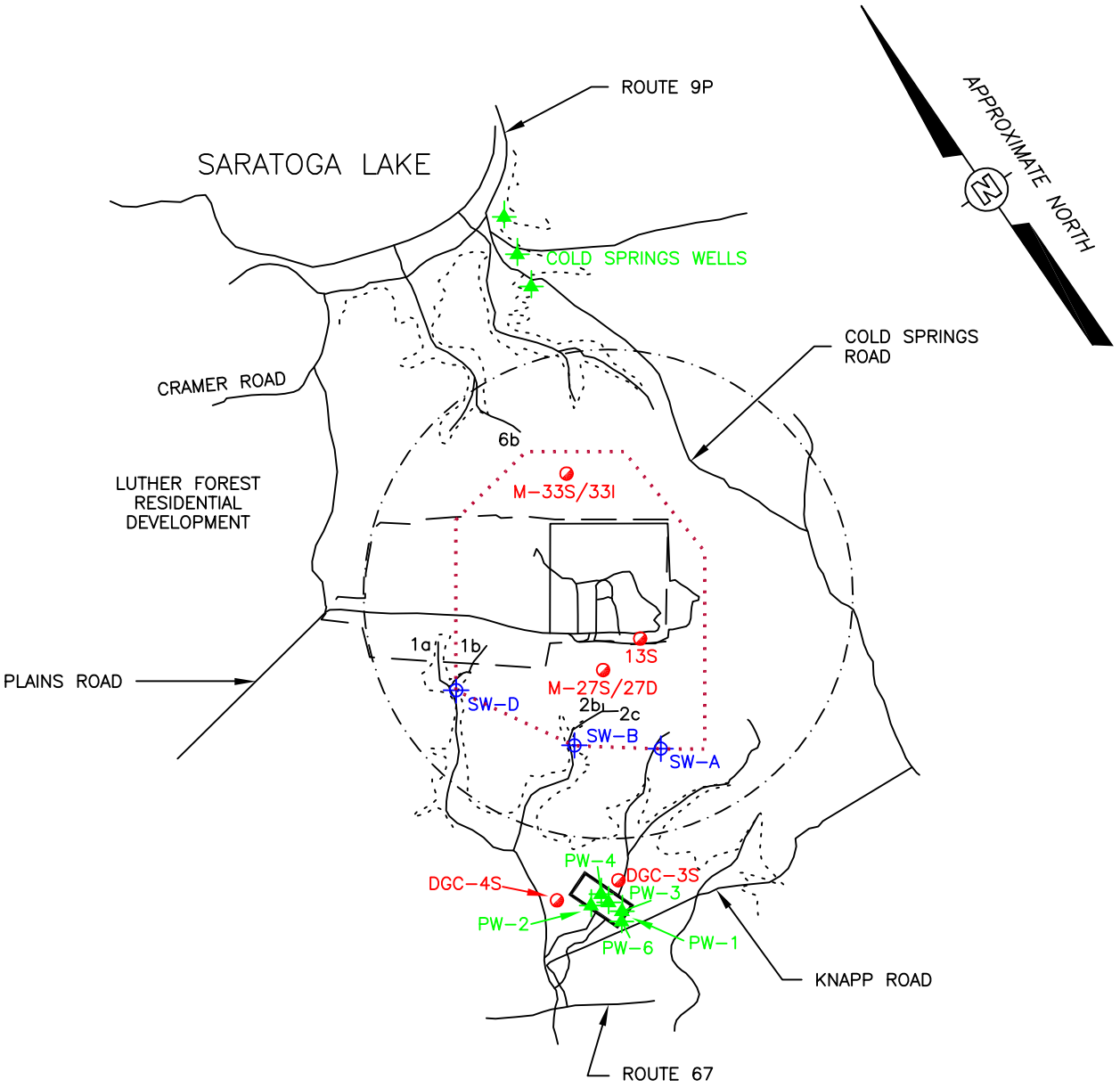
R = Rejected during data validation.

* Based on NYSDEC Final Combined Regulatory Impact and Environmental Impact Statement (Title 6, Chapter X, Parts 700-706, 1998), identified for comparison purposes only.

** = Filtered Sample.

FIGURES

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	ALBANY	S. SHKOLNIK 07-28-03			810066A3



LEGEND

- DGC-4S WELL PAIR LOCATION & ID#
- PW-2 PUMPING WELL LOCATION & ID#
- LUTHER FOREST WELL FIELD
- SW-D SURFACE WATER SAMPLE LOCATION & ID#
- 6b RAVINE LOCATION & ID#
- — — APPROXIMATE MRFA SITE BOUNDARY
- —·— APPROXIMATE ONE MILE EASEMENT BOUNDARY
- ------ 250' GROUND SURFACE CONTOUR LINE
- ····· ENVIRONMENTAL RESTRICTION BOUNDARY

APPROXIMATE

S C A L E

0 3600 7200 FEET

REFERENCE:

REFERENCE DRAWING:
ERM – SEPTEMBER, 1998.

Shaw Environmental, Inc.

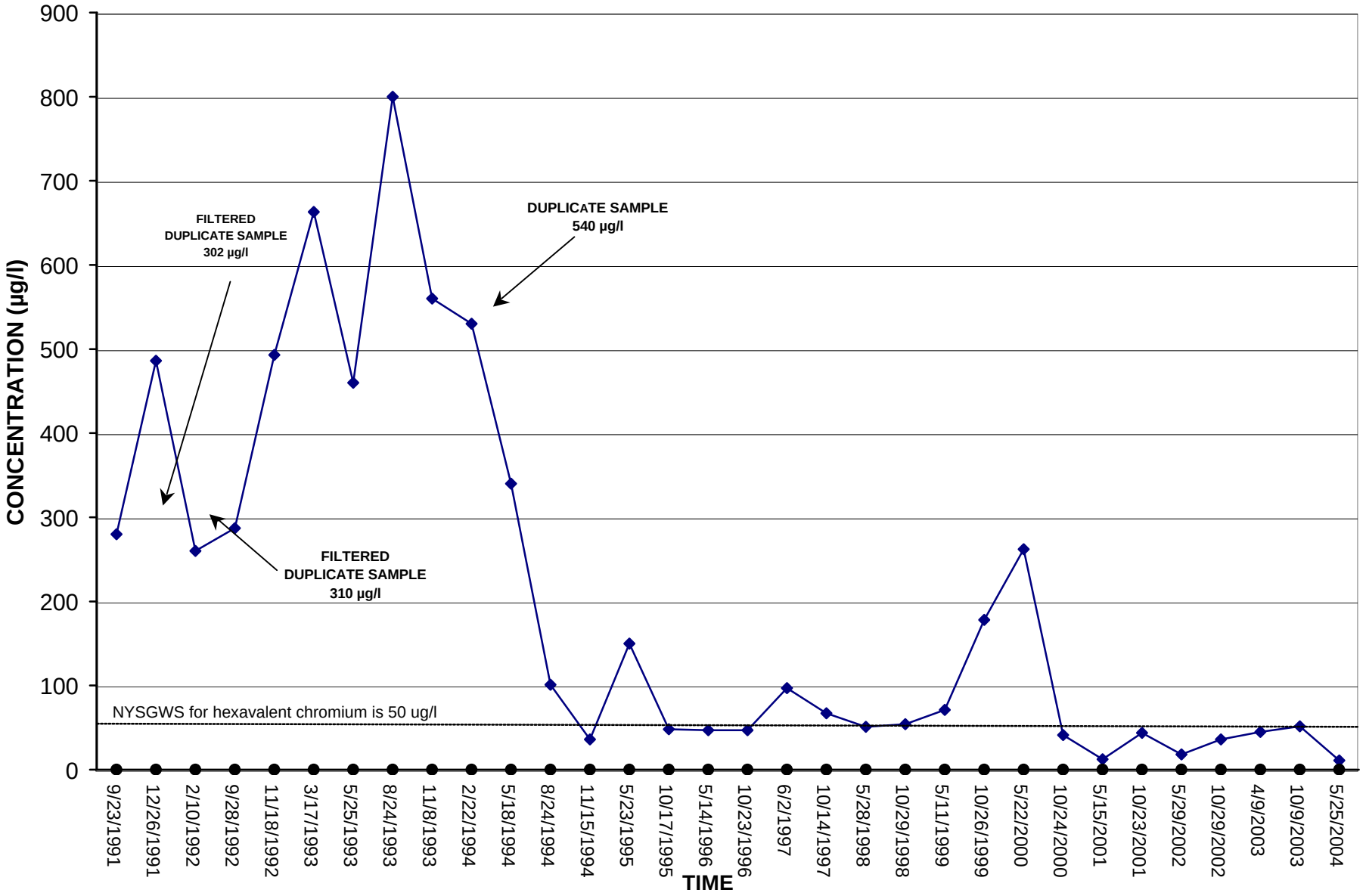
MALTA ROCKET FUEL AREA SITE
MALTA, NEW YORK

FIGURE 1

SITE LOCATION MAP

L:\project\MRFA\810066A3.dwg
Plot Date/Time: 08/05/04 02:28pm
Plotted by: Samuil.Shkolnik

FIGURE 2
WELL 13S HEXAVALENT CHROMIUM CONCENTRATIONS



X:\199Reps\MRFA\Semi Annual OM Reps\12-19-03 - 6-29-04\Figures.xls

FIGURE 3
WELL M-27D CARBON TETRACHLORIDE CONCENTRATIONS

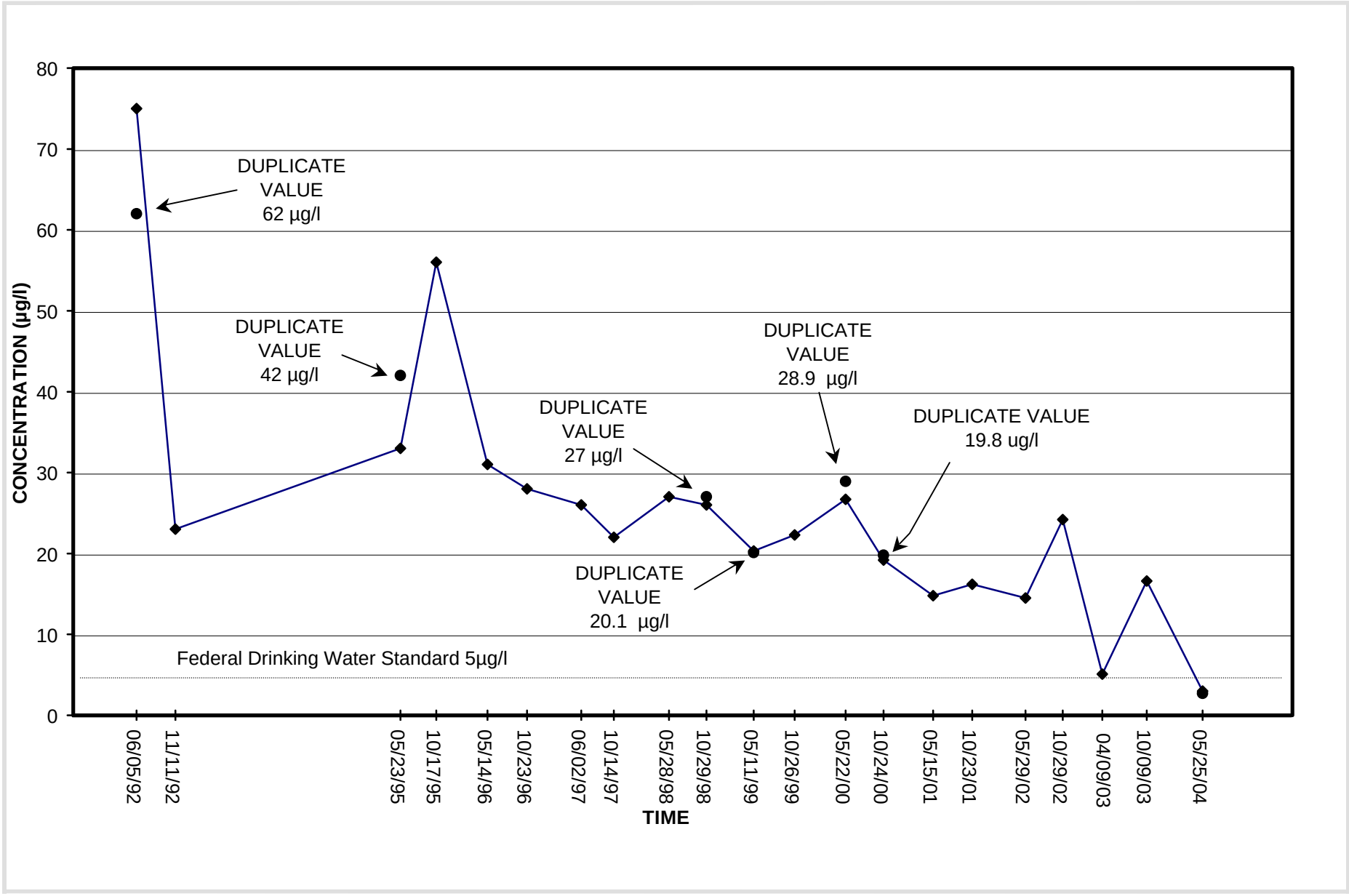
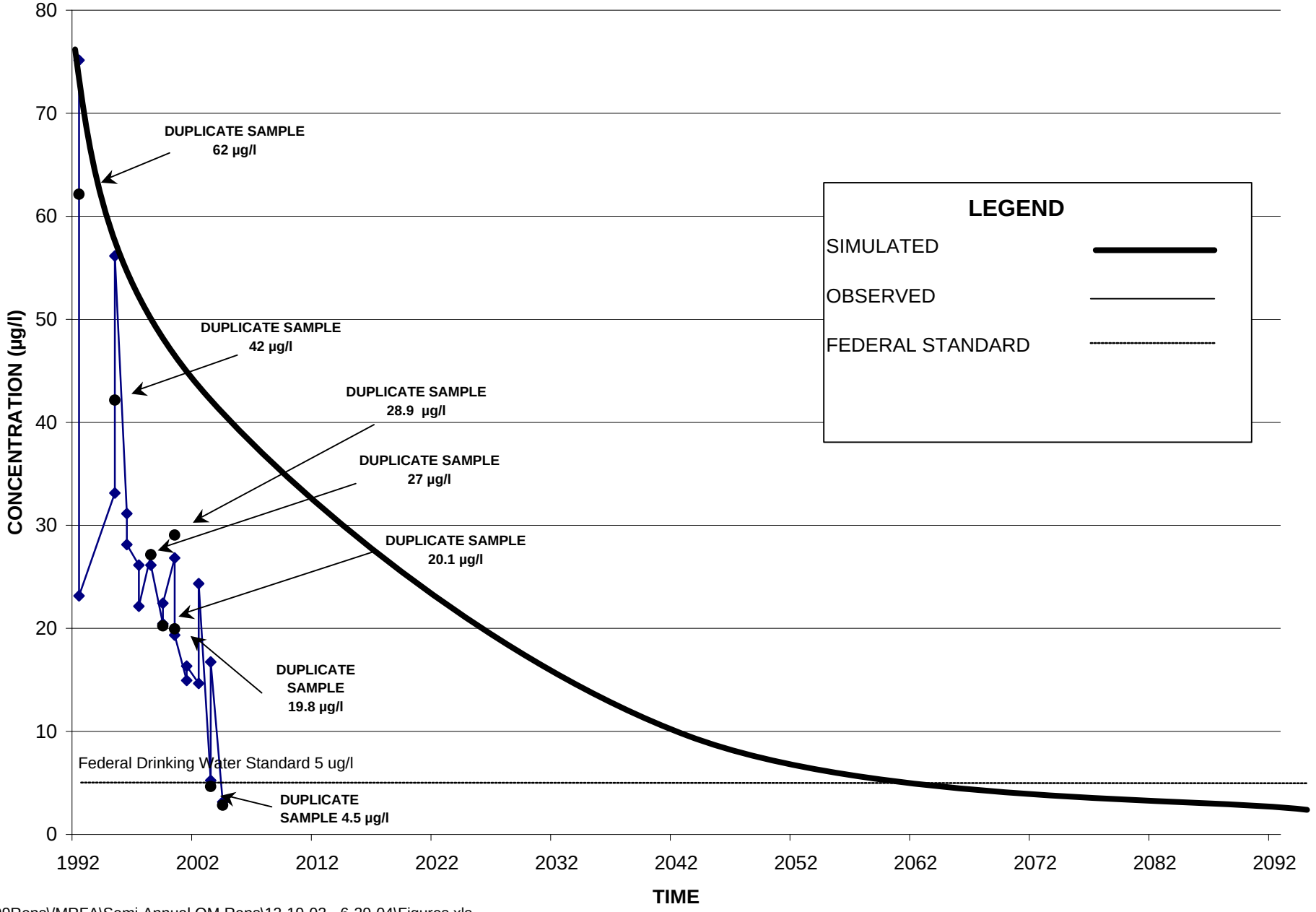


FIGURE 4
SIMULATED VERSUS OBSERVED (MAY 2004)
CARBON TETRACHLORIDE CONCENTRATIONS
AT WELL M-27D



X:\199Reps\MRFA\Semi Annual OM Reps\12-19-03 - 6-29-04\Figures.xls

FIGURE 5
SIMULATED VERSUS OBSERVED (MAY 2004)
TRICHLOROETHYLENE CONCENTRATIONS
AT WELL M-33S

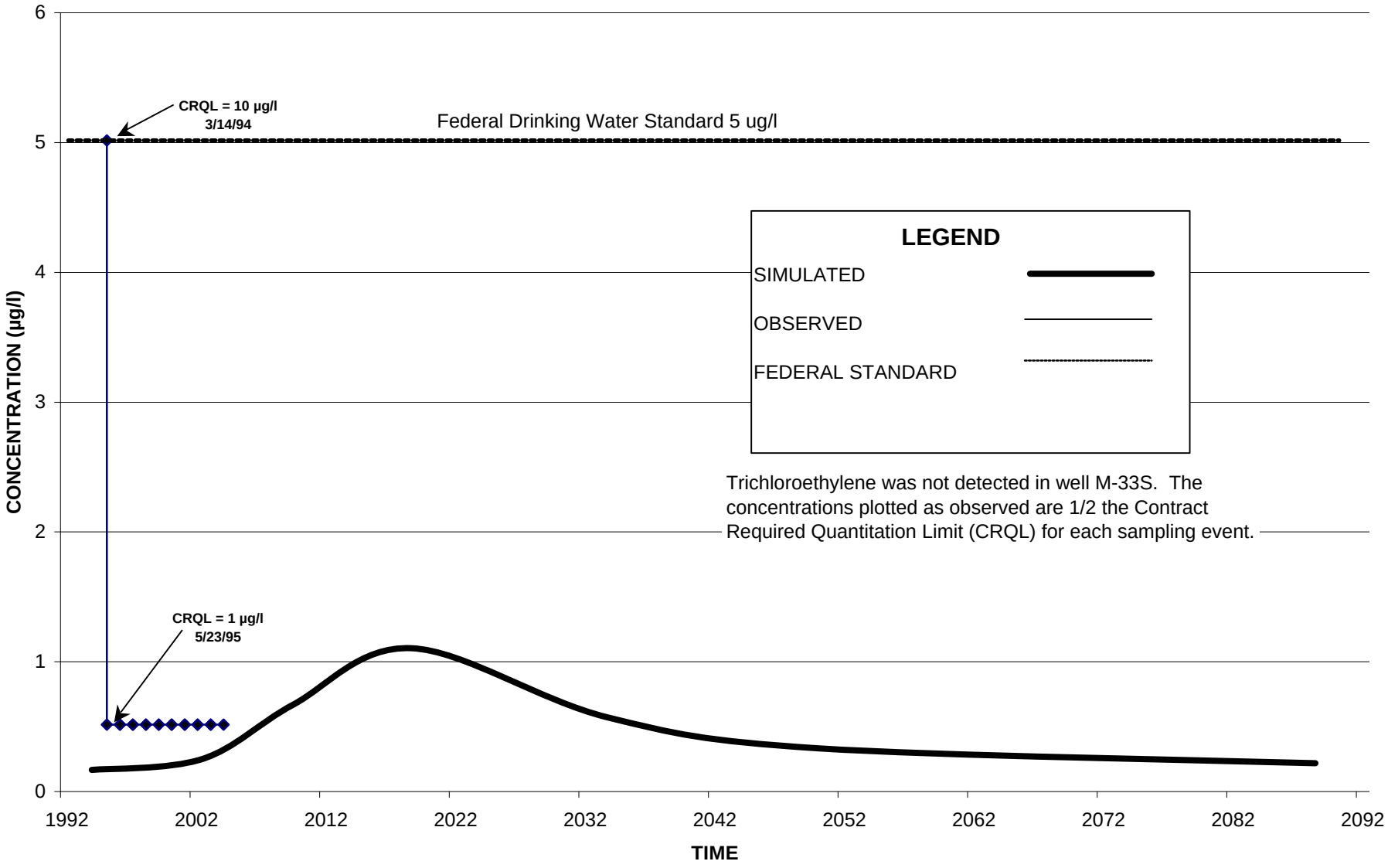
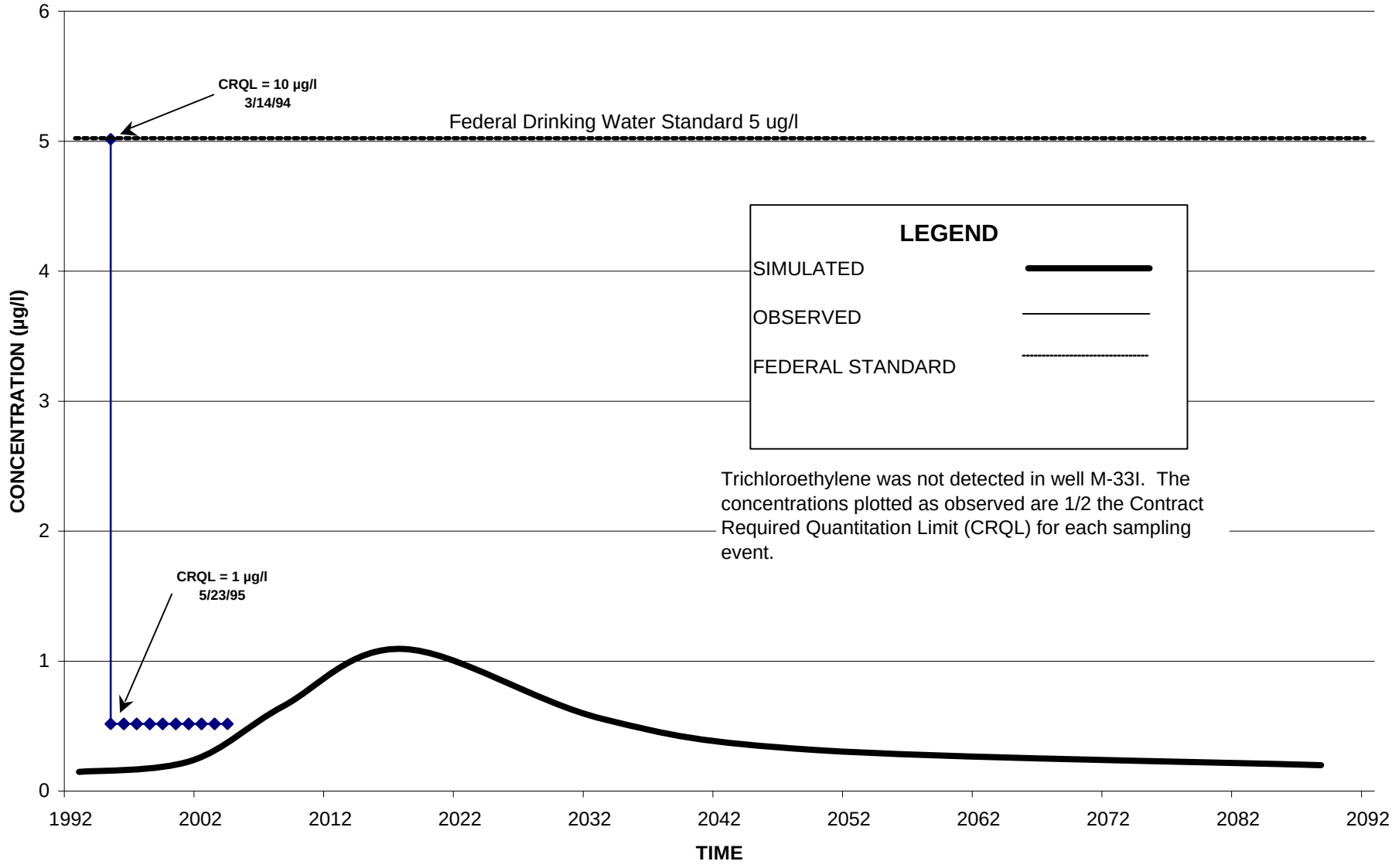


FIGURE 6
SIMULATED VERSUS OBSERVED (MAY 2004)
TRICHLOROETHYLENE CONCENTRATIONS
AT WELL M-33I



APPENDIX A

LABORATORY DATA, INFLUENT/EFFLUENT WATER SAMPLES

March 2, 2004 AND MAY 25, 2004

1 Mustard Street, Suite 250 Rochester, NY 14609-6925 (585) 288-5380 (585) 288-8475 fax

Columbia Analytical Services INC.
An Employee - Owned Company

March 30, 2004

Mr. Brian Neumann
Shaw Environmental
13 British American Blvd.
Latham, NY 12110

Re: GE MRFA
Submission # R2420413
SDG # Influent

Dear Mr. Neumann:

Enclosed is the analytical data report for the above referenced facility. A total of three samples were received by our laboratory on March 3, 2004.

Any problems encountered with this project are addressed in a case narrative section which is presented later in this report.

This report consists of two (2) packages: the sample data package and the sample data summary package. The data package and summary package have been mailed to Judy Harry and the summary package only has been mailed to your attention and to Steve Meier. All data presented in this package has been reviewed prior to report submission. If you should have any questions or concerns, please contact me at (585) 288-5380.

Thank you for your continued use of our services.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice M. Jaeger
Project Chemist

enc.

cc: Ms. Judy Harry
Data Validation Services
Cobble Creek Road
North Creek, NY 12853

cc: Mr. Steve Meier
GE Corporate Environmental Programs
320 Great Oaks Blvd.
Suite 323
Albany, NY 12203

Columbia Analytical Services, Inc.
1 Mustard ST.
Suite 250
Rochester, NY 14609
(585) 288-5380

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : Shaw Environmental
Project Reference: GE MRFA PROJECT #810066
Lab Submission # : R2420413
Project Manager : Janice Jaeger
Reported : 03/30/04

Report Contains a total of 34 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. Michael K Perry

CASE NARRATIVE

COMPANY: Shaw Environmental
GE MRFA Project #810066
SUBMISSION #: R2420413

Shaw water samples were collected on 03/02/04 and received at CAS on 03/03/04 in good condition at a cooler temperature of 3 C. A trip blank was not received with the samples and at the client's request, the samples were analyzed.

VOLATILE ORGANICS

Three water samples and one cooler blank were analyzed for a Site Specific List of Volatiles by method OLC 2.1.

All Tuning criteria for BFB were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within limits.

All surrogate standard recoveries were within limits.

All samples were analyzed within required holding times.

Site specific QC was performed on Influent. All MS/MSD recoveries were within limits. All Blank Spike recoveries were within limits. All RPD's were within limits except Trichloroethene and has been flagged with an "*".

The Laboratory Blanks associated with these samples was free of contamination.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in the hard copy package has been authorized by the Laboratory Manager or his designee, as verified by the following signature; Michael K Perry

CAS ASP/CLP BATCHING FORM / LOGIN SHEET

SDG #:INFLUENT
SUBMISSION R2420413
CLIENT: Shaw Environmental
CLIENT REP: Janice Jaeger
PROJECT: GE MRFA PROJECT #810066

BATCH COMPLETE: __yes_____
DISKETTE REQUESTED: Y___ N__X__
DATE: 03/03/04
CUSTODY SEAL: PRESENT/ABSENT:
CHAIN OF CUSTODY: PRESENT/ABSENT:

DATE REVISED:
DATE DUE: 03/31/04
PROTOCOL: CLP
SHIPPING No.:
SUMMARY PKG: Y___X__ N

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS	REMARKS SAMPLE CONDITION
710506QC	INFLUENT	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
710507	EFFLUENT	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
710508	DUP A	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
~~710509~~	~~TRIP BLANK~~	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
710510	COOLER BLANK	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
no trip blank received SMJ 3/3/04								

3

Columbia Analytical Services INC.
An Employee - Owned Company

ACCREDITED IN ACCORDANCE WITH nelac

Ethics Service Quality ACIL 2003 SEAL OF EXCELLENCE PROGRAM Environmental

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 a 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 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.

* - This flag identifies compounds associated with a quality control parameter which exceeds laboratory limits.

CAS/Rochester Lab ID # for State Certifications

Army Corp of Engineers Validated
Delaware Accredited
Connecticut ID # PH0556
Florida ID # E87674
Massachusetts ID # M-NY032
Navy Facilities Engineering Service Center Approved
Nebraska Accredited
NELAP Accredited
New York ID # 10145
New Jersey ID # NY004
New Hampshire ID # 294100 A/B
Pennsylvania Registration 68-786
Rhode Island ID # 158
South Carolina ID #91012
West Virginia ID # 292

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services, Inc.
An Employee - Owned Company
www.caslab.com

One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (585) 288-5380 • 800-695-7222 x11 • FAX (585) 288-8475

PAGE 1 OF 1

SR #

CAS Contact

Project Name: GE MRFA	Project Number: 810066
Project Manager: Brian Neumann	Report CC: Steven Meier, Judy Harry
Company/Address: Shaw Environmental Inc. 13 British American Blvd. Latham NY 12110	
Phone #: 518-783-1996	FAX#: 518-783-8397
Sampler's Signature	Sampler's Printed Name

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	OLC 2.1 VOA	REMARKS/ ALTERNATE DESCRIPTION
Influent	710506	3/2/04	1315	H2O	3								X	
Influent MS	06		1315		3								X	
Influent MSD	06		1315		3								X	
Effluent	07		1320		3								X	
Dup A	08	↓	—		3								X	
Trip Blank	↓ 09	—	—		3								X	
Temperature Blank		—	—	↓	X									

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

Metals Also analyze VOC sampler for: hexachlorobutadiene or 1,2,3-trichlorobenzene trichlorofluoromethane

See QAPP ☐

no trip blank received with samples, OK to analyze as per John Skaanup MW 3/3/04

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 24 hr ___ 48 hr ___ 5 day
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
___ IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
PO#
BILL TO: Steven Meier
GE CEP
Albany, NY
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: Robert Wade	Printed Name: Heather Lavigne	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Shaw Environmental, Inc.	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time: 3/3/04 1600	Date/Time: 3/3/04 930	Date/Time	Date/Time	Date/Time	Date/Time

SCOC-1102-08

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

Cooler Receipt And Preservation Check Form

Project/Client Shaw Submission Number R2-20413

Cooler received on 3/3/04 by: DD COURIER: CAS (UPS) FEDEX CD&L CLIENT

1.	Were custody seals on outside of cooler?	(YES)	NO			
2.	Were custody papers properly filled out (ink, signed, etc.)?	(YES)	NO			
3.	Did all bottles arrive in good condition (unbroken)?	(YES)	NO			
4.	Did any VOA vials have significant air bubbles?	YES	(NO)	N/A		
5.	Were **Ice** or **Ice packs** present?	(YES)	NO			
6.	Where did the bottles originate?	CAS/ROC	CLIENT			
7.	Temperature of cooler(s) upon receipt:	3'				
	Is the temperature within 0° - 6° C?:	(Yes)	Yes	Yes	Yes	Yes
	If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: 3/3/04 940

Thermometer ID: 161 or (IR GUN) Reading From: Temp Blank or (Sample Bottle)

If out of Temperature, Client Approval to Run Samples _____

Cooler Breakdown: Date: 3/3/04 by: DD

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO
4.	Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated		(N/A)

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
Residual Chlorine (+/-)	for TCN & Phenol					
5-9**	P/PCBs (608 only)					

YES = 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_2SO_4.

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

Other Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3149

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	0.89	J
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	9.4	
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	11.8	
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3149

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

INFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3149

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.66	0.55	J
2.					
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FORM I VOA-TIC

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710507

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3150

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710507

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3150

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710507

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3150

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP A

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710508

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3153

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	UJ
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	UJ
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP A

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710508

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3153

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DUP A

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710508

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3153

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.65	0.68	J
2.					
3.					
4.					
5.					
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7.					
8.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

COOLER BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710510

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3155

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

COOLER BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710510

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3155

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

COOLER BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710510

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3155

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	109-99-9	FURAN, TETRAHYDRO-	11.68	0.68	NJ
2.					
3.					
4.					
5.					
6.					
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29.					
30.					

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

	EPA SAMPLE NO.	SMC1 (BFB) #	SMC2 #	SMC3 #	OTHER	TOT OUT
01	VBLK01	84				0
02	VBLK01MS	98				0
03	INFLUENT	88				0
04	EFFLUENT	90				0
05	INFLUENT MS	98				0
06	INFLUENT MSD	90				0
07	DUP A	82				0
08	COOLER BLANK	94				0
09						
10						
11						
12						
13						
14						
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27						
28						
29						
30						

QC LIMITS

SMC1 (BFB) = bromofluorobenzene (80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix Spike - EPA Sample No.: INFLUENT

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC #	QC. LIMITS REC.
vinyl chloride	5.0	0.00	4.4	88	60-140
carbontetrachloride	5.0	9.4	14.7	106	60-140
benzene	5.0	0.00	4.7	94	60-140
1,2-dichloroethane	5.0	0.00	4.4	88	60-140
trichloroethene	5.0	11.8	16.4	92	60-140
1,2-dichloropropane	5.0	0.00	4.5	90	60-140
cis-1,3-dichloropropene	5.0	0.00	4.4	88	60-140
1,1,2-trichloroethane	5.0	0.00	4.6	92	60-140
tetrachloroethene	5.0	0.00	4.9	98	60-140
1,2-Dibromoethane	5.0	0.00	4.4	88	60-140
bromoform	5.0	0.00	4.9	98	60-140
1,4-Dichlorobenzene	5.0	0.00	4.9	98	60-140

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
vinyl chloride	5.0	4.6	92	4	20	60-140
carbontetrachloride	5.0	15.6	124	16	20	60-140
benzene	5.0	5.2	104	10	20	60-140
1,2-dichloroethane	5.0	4.5	90	2	20	60-140
trichloroethene	5.0	17.5	114	21*	20	60-140
1,2-dichloropropane	5.0	5.0	100	10	20	60-140
cis-1,3-dichloropropene	5.0	4.9	98	11	20	60-140
1,1,2-trichloroethane	5.0	4.9	98	6	20	60-140
tetrachloroethene	5.0	5.5	110	12	20	60-140
1,2-Dibromoethane	5.0	4.5	90	2	20	60-140
bromoform	5.0	5.4	108	10	20	60-140
1,4-Dichlorobenzene	5.0	5.1	102	4	20	60-140

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

* Values outside of QC limits

RPD: 1 out of 12 outside limits
Spike Recovery: 0 out of 24 outside limits

COMMENTS: *Sample QC Not required by method; 1% outlier not considered significant; DATA JUDGED acceptable based on method criteria

FORM III VOA-1

3/27

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506 MS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3151

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	4.6	
75-01-4	vinyl chloride	4.4	
74-83-9	bromomethane	4.6	
75-00-3	chloroethane	4.6	
75-69-4	Trichlorofluoromethane	4.7	
75-35-4	1,1-dichloroethene	4.7	
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	4.7	
75-09-2	methylene chloride	4.7	
156-59-2	cis-1,2-Dichloroethene	4.6	
156-60-5	trans-1,2-dichloroethene	4.3	
67-66-3	chloroform	5.5	
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	4.6	
71-55-6	1,1,1-trichloroethane	4.6	
56-23-5	carbontetrachloride	14.7	
71-43-2	benzene	4.7	
107-06-2	1,2-dichloroethane	4.4	
79-01-6	trichloroethene	16.4	
78-87-5	1,2-dichloropropane	4.5	
75-27-4	bromodichloromethane	4.7	
10061-01-5	cis-1,3-dichloropropene	4.4	
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	4.7	
10061-02-6	trans-1,3-dichloropropene	4.4	
79-00-5	1,1,2-trichloroethane	4.6	
127-18-4	tetrachloroethene	4.9	
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	4.5	
106-93-4	1,2-Dibromoethane	4.4	
108-90-7	chlorobenzene	4.6	
100-41-4	ethylbenzene	4.7	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506 MS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3151

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	9.2	
1330-20-7	o-xylene	4.5	
100-42-5	styrene	4.3	
75-25-2	bromoform	4.9	
79-34-5	1,1,2,2-tetrachloroethane	4.0	
541-73-1	1,3-Dichlorobenzene	4.7	
106-46-7	1,4-Dichlorobenzene	4.9	
95-50-1	1,2-Dichlorobenzene	4.7	
96-12-8	1,2-dibromo-3-chloropropane	4.6	
120-82-1	1,2,4-Trichlorobenzene	4.7	
87-68-3	Hexachlorobutadiene	5.2	
87-61-6	1,2,3-Trichlorobenzene	4.8	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT MSD

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506 MSD

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3152

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	4.6	
75-01-4	vinyl chloride	4.6	
74-83-9	bromomethane	4.7	
75-00-3	chloroethane	4.5	
75-69-4	Trichlorofluoromethane	4.7	
75-35-4	1,1-dichloroethene	5.2	
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	4.8	
75-09-2	methylene chloride	4.8	
156-59-2	cis-1,2-Dichloroethene	5.0	
156-60-5	trans-1,2-dichloroethene	4.9	
67-66-3	chloroform	5.7	
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	4.7	
71-55-6	1,1,1-trichloroethane	5.1	
56-23-5	carbontetrachloride	15.6	
71-43-2	benzene	5.2	
107-06-2	1,2-dichloroethane	4.5	
79-01-6	trichloroethene	17.5	
78-87-5	1,2-dichloropropane	5.0	
75-27-4	bromodichloromethane	5.1	
10061-01-5	cis-1,3-dichloropropene	4.9	
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	5.3	
10061-02-6	trans-1,3-dichloropropene	4.9	
79-00-5	1,1,2-trichloroethane	4.9	
127-18-4	tetrachloroethene	5.5	
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	4.8	
106-93-4	1,2-Dibromoethane	4.5	
108-90-7	chlorobenzene	5.0	
100-41-4	ethylbenzene	5.2	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT MSD

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: 710506 MSD

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3152

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	10.2	
1330-20-7	o-xylene	5.0	
100-42-5	styrene	4.6	
75-25-2	bromoform	5.4	
79-34-5	1,1,2,2-tetrachloroethane	4.3	
541-73-1	1,3-Dichlorobenzene	5.0	
106-46-7	1,4-Dichlorobenzene	5.1	
95-50-1	1,2-Dichlorobenzene	5.2	
96-12-8	1,2-dibromo-3-chloropropane	4.6	
120-82-1	1,2,4-Trichlorobenzene	4.6	
87-68-3	Hexachlorobutadiene	5.3	
87-61-6	1,2,3-Trichlorobenzene	4.6	

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUEN

Matrix Spike - EPA Sample No.: VBLK01

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC #	QC. LIMITS REC.
vinyl chloride	5.0	0.00	4.9	98	60-140
carbontetrachloride	5.0	0.00	5.0	100	60-140
benzene	5.0	0.00	5.3	106	60-140
1,2-dichloroethane	5.0	0.00	5.4	108	60-140
trichloroethene	5.0	0.00	5.0	100	60-140
1,2-dichloropropane	5.0	0.00	5.6	112	60-140
cis-1,3-dichloropropene	5.0	0.00	5.5	110	60-140
1,1,2-trichloroethane	5.0	0.00	5.8	116	60-140
tetrachloroethene	5.0	0.00	5.0	100	60-140
1,2-Dibromoethane	5.0	0.00	5.2	104	60-140
bromoform	5.0	0.00	5.5	110	60-140
1,4-Dichlorobenzene	5.0	0.00	5.2	104	60-140

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: _____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: ICV/LCS/CDC#1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3145

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. ________ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	4.7	
75-01-4	vinyl chloride	4.9	
74-83-9	bromomethane	5.1	
75-00-3	chloroethane	4.9	
75-69-4	Trichlorofluoromethane	4.7	
75-35-4	1,1-dichloroethene	5.0	
67-64-1	acetone	25.8	
75-15-0	carbon disulfide	27.3	E
75-34-3	1,1-dichloroethane	5.1	
75-09-2	methylene chloride	5.3	
156-59-2	cis-1,2-Dichloroethene	5.3	
156-60-5	trans-1,2-dichloroethene	4.8	
67-66-3	chloroform	5.3	
78-93-3	2-butanone	28.2	
74-97-5	bromochloromethane	5.2	
71-55-6	1,1,1-trichloroethane	5.3	
56-23-5	carbontetrachloride	5.0	
71-43-2	benzene	5.3	
107-06-2	1,2-dichloroethane	5.4	
79-01-6	trichloroethene	5.0	
78-87-5	1,2-dichloropropane	5.6	
75-27-4	bromodichloromethane	5.6	
10061-01-5	cis-1,3-dichloropropene	5.5	
108-10-1	4-methyl-2-pentanone	28.2	
108-88-3	toluene	5.3	
10061-02-6	trans-1,3-dichloropropene	5.6	
79-00-5	1,1,2-trichloroethane	5.8	
127-18-4	tetrachloroethene	5.0	
591-78-6	2-hexanone	28.9	
124-48-1	dibromochloromethane	5.5	
106-93-4	1,2-Dibromoethane	5.2	
108-90-7	chlorobenzene	5.0	
100-41-4	ethylbenzene	5.0	

Spiked over range orig AS/MSD [illegible]

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: ICV/LCS/CDC#1

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3145

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	9.9	
1330-20-7	o-xylene	5.1	
100-42-5	styrene	4.9	
75-25-2	bromoform	5.5	
79-34-5	1,1,2,2-tetrachloroethane	5.3	
541-73-1	1,3-Dichlorobenzene	4.9	
106-46-7	1,4-Dichlorobenzene	5.2	
95-50-1	1,2-Dichlorobenzene	5.2	
96-12-8	1,2-dibromo-3-chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	4.8	
87-68-3	Hexachlorobutadiene	4.7	
87-61-6	1,2,3-Trichlorobenzene	4.9	

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Lab File ID: Z3144 Lab Sample ID: VBLK01

Date Analyzed: 03/11/04 Time Analyzed: 1231

GC Column: ZB-624-30MID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: MS2

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK01MS	ICV/LCS/CDC#1	Z3145	1318
02	INFLUENT	710506	Z3149	1555
03	EFFLUENT	710507	Z3150	1703
04	INFLUENT MS	710506 MS	Z3151	1744
05	INFLUENT MSD	710506 MSD	Z3152	1829
06	DUP A	710508	Z3153	1905
07	COOLER BLANK	710510	Z3155	2017
08				
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3144

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3144

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Matrix: (soil/water) WATER Lab Sample ID: VBLK01

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: Z3144

Level: (low/med) LOW Date Received: 03/03/04

% Moisture: not dec. _____ Date Analyzed: 03/11/04

GC Column: ZB-624-30M ID: 0.32 (mm) Dilution Factor: 1.0

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INI

Lab File ID: Z3121 BFB Injection Date: 03/10/04

Instrument ID: MS2 BFB Injection Time: 1149

GC Column: ZB-624-30M ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	18.9
75	30.0 - 66.0% of mass 95	55.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	50.0 - 120.0% of mass 95	76.8
175	4.0 - 9.0% of mass 174	5.3 (7.0)1
176	93.0 - 101.0% of mass 174	74.4 (96.9)1
177	5.0 - 9.0% of mass 176	5.6 (7.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		VSTD001/005	Z3123	03/10/04	1407
02		VSTD002/008	Z3124	03/10/04	1451
03		VSTD005/020	Z3125	03/10/04	1537
04		VSTD025/100	Z3127	03/10/04	1716
05		VSTD010/080	Z3128	03/10/04	1805
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Lab File ID: Z3141 BFB Injection Date: 03/11/04

Instrument ID: MS2 BFB Injection Time: 1030

GC Column: ZB-624-30M ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	20.6
75	30.0 - 66.0% of mass 95	56.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.6 (0.7)1
174	50.0 - 120.0% of mass 95	75.0
175	4.0 - 9.0% of mass 174	5.3 (7.1)1
176	93.0 - 101.0% of mass 174	72.3 (96.4)1
177	5.0 - 9.0% of mass 176	5.3 (7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD	VSTD	Z3142	03/11/04	1110
02	VBLK01	VBLK01	Z3144	03/11/04	1231
03	VBLK01MS	ICV/LCS/CDC#1	Z3145	03/11/04	1318
04	INFLUENT	710506	Z3149	03/11/04	1555
05	EFFLUENT	710507	Z3150	03/11/04	1703
06	INFLUENT MS	710506 MS	Z3151	03/11/04	1744
07	INFLUENT MSD	710506 MSD	Z3152	03/11/04	1829
08	DUP A	710508	Z3153	03/11/04	1905
09	COOLER BLANK	710510	Z3155	03/11/04	2017
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-20413 SAS No.: SDG No.: INFLUENT

Lab File ID (Standard): Z3142 Date Analyzed: 03/11/04

Instrument ID: MS2 Time Analyzed: 1110

GC Column: ZB-624-30M ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(DCB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DFB) AREA #	RT #
	12 HOUR STD	250336	23.99	619338	19.16	795619	13.38
	UPPER LIMIT	500672	24.49	1238676	19.66	1591238	13.88
	LOWER LIMIT	125168	23.49	309669	18.66	397810	12.88
	EPA SAMPLE NO.						
01	VBLK01	213000	24.00	603022	19.17	828736	13.39
02	VBLK01MS	240037	24.00	605135	19.18	808018	13.41
03	INFLUENT	218132	24.02	622736	19.20	806967	13.42
04	EFFLUENT	245984	24.01	679193	19.19	898425	13.41
05	INFLUENT MS	253737	24.02	668182	19.18	863977	13.41
06	INFLUENT MSD	246695	24.02	678648	19.18	918922	13.41
07	DUP A	212591	24.01	624739	19.19	870332	13.41
08	COOLER BLANK	218639	24.01	593856	19.19	776206	13.41
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (CBZ) = chlorobenzene-d5
IS3 (DFB) = 1,4-Difluorobenzene

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 used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

1 Mustard Street, Suite 250 Rochester, NY 14609-6925 (585) 288-5380 (585) 288-8475 fax

Columbia Analytical Services INC
An Employee - Owned Company

July 12, 2004

Mr. Brian Neumann
Shaw Environmental
13 British American Blvd.
Latham, NY 12110

Re: MRFA
Submission # R2421508
SDG # DGC-4S

Dear Mr. Neumann:

Enclosed is the analytical data report for the above referenced facility. A total of fourteen samples were received by our laboratory on May 26, 2004.

Any problems encountered with this project are addressed in a case narrative section which is presented later in this report.

This report consists of two (2) packages: the sample data package and the sample data summary package. The data package and summary package have been mailed to Judy Harry and the summary package only has been mailed to your attention and to Steve Meier. All data presented in this package has been reviewed prior to report submission. If you should have any questions or concerns, please contact me at (585) 288-5380.

Thank you for your continued use of our services.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice M. Jaeger
Project Chemist

enc.

cc: Ms. Judy Harry
Data Validation Services
Cobble Creek Road
North Creek, NY 12853

cc: Mr. Steve Meier
GE Corporate Environmental Programs
320 Great Oaks Blvd.
Suite 323
Albany, NY 12203

Columbia Analytical Services, Inc.

1 Mustard ST.
Suite 250
Rochester, NY 14609
(585) 288-5380

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client : Shaw Environmental
Project Reference: MRFA
Lab Submission # : R2421508
Project Manager : Janice Jaeger
Reported : 07/06/04

Report Contains a total of 92 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. Michael K. Perry

CASE NARRATIVE

COMPANY: Shaw Environmental
MRFA
SUBMISSION #: R2421508

Shaw water samples were collected on 05/25/04 and received at CAS on 05/26/04 in good condition at a cooler temperature of 6 C.

INORGANICS

Five water samples were analyzed for Total Chromium by CLP methods and Hexavalent Chromium by 7199.

Site specific QC was performed on M-27S. All MS and Blank spike recoveries were within limits. All RPD's were within limits.

Due to an instrument malfunction, the Hexavalent Chromium samples could not be analyzed by method 7196A and were analyzed by method 7199 as mentioned above and also were analyzed slightly outside the 24 hour holding time.

No other analytical or QC problems were encountered.

VOLATILE ORGANICS

Thirteen water samples, one cooler blank and one trip blanks were analyzed for a Site Specific List of Volatiles by method OLC 2.1.

All Tuning criteria for BFB were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within limits.

All surrogate standard recoveries were within limits.

All samples were analyzed within required holding times.

Site specific QC was performed on M-27S. All MS/MSD recoveries were within limits. All Blank Spike recoveries were within limits. All RPD's were within limits.

The Laboratory Blanks associated with these samples were free of contamination except VBLK01 contained a low level hit for Methylene Chloride and VBLK02 had a low level hit for Chloroform. All affecte data has been flagged with a "B".

No other analytical or QC problems were encountered.

PERCHLORATE

Water samples were subcontacted to CAS-Kelso for Perchlorate analysis. Their complete data package follows.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in the hard copy package has been authorized by the Laboratory Manager or his designee, as verified by the following signature;

CAS ASP/CLP BATCHING FORM / LOGIN SHEET

SDG #: DGC-4S
SUBMISSION R2421508
CLIENT: Shaw Environmental
CLIENT REP: Janice Jaeger
PROJECT: MRFA

BATCH COMPLETE: __yes_____
DISKETTE REQUESTED: Y__X_ N____
DATE: 05/28/04
CUSTODY SEAL: PRESENT/ABSENT:
CHAIN OF CUSTODY: PRESENT/ABSENT:

DATE REVISED:
DATE DUE: 06/23/04
PROTOCOL: CLP
SHIPPING No.:
SUMMARY PKG: Y__X_ N

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS	REMARKS SAMPLE CONDITION
730317	SYSTEM INFLUENT	WATER	OLC2.1VOA*	5/25/04	5/26/04			
730331	DGC-4S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730332	DGC-3S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730333	M33I	WATER	OLC2.1VOA	5/25/04	5/26/04			
730334	M33S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730335	SW D	WATER	OLC2.1VOA	5/25/04	5/26/04			
730336	SW B	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730337	M27D	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730338QC	M27S	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730339	SW A	WATER	OLC2.1VOA	5/25/04	5/26/04			
730340	13S	WATER	CR6,CR	5/25/04	5/26/04			
730341	DUPLICATE	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730342	COOLER BLANK	WATER	OLC2.1VOA	5/25/04	5/26/04			
730463	SYSTEM EFFLUENT	WATER	OLC2.1VOA	5/25/04	5/26/04			
731049	TRIP BLANK	WATER	OLC2.1VOA	5/25/04	5/28/04 2			
			* perchlorate sub totals					

3

730317 XLS

5/28/04

Columbia Analytical Services INC.
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ACCREDITED IN ACCORDANCE WITH nelac

Ethics Service Quality ACIL 2003 SEAL OF EXCELLENCE PROGRAM Environmental

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 a 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 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.

* - This flag identifies compounds associated with a quality control parameter which exceeds laboratory limits.

CAS/Rochester Lab ID # for State Certifications

Army Corp of Engineers Validated
Delaware Accredited
Connecticut ID # PH0556
Florida ID # E87674
Massachusetts ID # M-NY032
Navy Facilities Engineering Service Center Approved
Nebraska Accredited
NELAP Accredited
New York ID # 10145
New Jersey ID # NY004
New Hampshire ID # 294100 A/B
Pennsylvania Registration 68-786
Rhode Island ID # 158
South Carolina ID #91012
West Virginia ID # 292

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Service Quality Ethics ACIL 2003 SEAL OF EXCELLENCE PROGRAM Environmental

INORGANIC QUALIFIERS

C (Concentration) qualifier –

B - if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).
U - if the analyte was analyzed for, but not detected

Q qualifier - Specified entries and their meanings are as follows:

D - Spike was diluted out
E - The reported value is estimated because of the presence of interference.
J - Estimated Value
M - Duplicate injection precision not met.
N - Spiked sample recovery not within control limits.
S - The reported value was determined by the Method of Standard Additions (MSA).
W - Post-digestion spike for Furnace AA Analysis is out of control limits (85-115), while sample absorbance is less than 50% of spike absorbance.
* - Duplicate analysis not within control limits.
+ - Correlation coefficient for the MSA is less than 0.995.

M (Method) qualifier:

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "PM" for ICP when Microwave Digestion is used
- "AM" for Flame AA when Microwave Digestion is used
- "FM" for Furnace M when Microwave Digestion is used
- "CV" for Manual Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "CA" for Midi-Distillation Spectrophotometric
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- " " where no data has been entered
- "NR" if the analyte is not required to be analyzed.

CAS/Rochester Lab ID # for State Certifications

Army Corp of Engineers Validated
Delaware Accredited
Connecticut ID # PH0556
Florida ID # E87674
Massachusetts ID # M-NY032
Navy Facilities Engineering Service Center Approved
Nebraska Accredited
NELAP Accredited
New York ID # 10145
New Jersey ID # NY004
New Hampshire ID # 294100 A/B
Pennsylvania Registration 68-786
Rhode Island ID # 158
South Carolina ID #91012
West Virginia ID # 292

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services INC.
An Employee - Owned Company
www.caslab.com
One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (585) 288-5380 • 800-695-7222 x11 • FAX (585) 288-8475

SR #

CAS Contact

Project Name: MRFA	Project Number:
Project Manager: Brian Neymann	Report CC:
Company/Address: Shaw Environmental, 13 British American BLVD, LAtham NY 12110	
Phone #: 518 763	FAX#:
Sampler's Signature:	Sampler's Printed Name:

ANALYSIS REQUESTED (*Include Method Number and Container Preservative*)

PRESERVATIVE

Preservative Key: 0. NONE 1. HCL 2. HNO_3 3. H_2SO_4 4. NaOH 5. Zn. Acetate 6. MeOH 7. $NaHSO_4$ 8. Other ______

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP OLC2.1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602 TCL	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below) Cr+	524.2	504	Perchlorate	Odor	Dioxins	Way 502 CTF	California	REMARKS/ ALTERNATE DESCRIPTION
System Influent	730317	5/25	8:55	W									✓	✓	✓					
System Effluent	↓ 18	5/25	9:00	W				✓			✓	✓	✓	✓		✓	✓	✓	✓	
system influent 730317						X														
system effluent 730403						X														

System Influent with R2421508

analyze system influent for OLC2.1 VOA + perchlorate & system effluent for OLC2.1 VOA as per

SPECIAL INSTRUCTIONS/COMMENTS
Metals – Cu Pb only (DOH samples)
504 Hexachlorobutadiene
1,2,3 Trichlorobenzene
TrichloroFluoromethane

See QAPP ☐

TURNAROUND REQUIREMENTS
RUSH (SURCHARGES APPLY)
___ 24 hr ___ 48 hr ___ 5 day
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
John Skwarup JMW
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: ______ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: [signature]	Signature: [signature]	Signature	Signature	Signature	Signature
Printed Name: Anthony Prucella	Printed Name: [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Shaw	Firm: [illegible]	Firm	Firm	Firm	Firm
Date/Time: [illegible]	Date/Time: [illegible]	Date/Time	Date/Time	Date/Time	Date/Time

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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www.caslab.com

One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (585) 288-5380 • 800-695-7222 x11 • FAX (535) 288-8475 PAGE 1 OF 2

SR #

CAS Contact

Project Name: MKFA	Project Number:
Project Manager: Brian Neumann	Report CC:
Company/Address: Shaw Env. Inc 13 British American BLVD Latham NY 12110	
Phone #: 518-783-1996	FAX#: 518 783-8397
Sampler's Signature:	Sampler's Printed Name: Anthony Perretta

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Cr	Cr +6	REMARKS/ ALTERNATE DESCRIPTION
DEC-45	730331	5/25	13:04	W		✓							✓	✓	
DEC-35	32	5/25	13:35	W		✓									
M33I	33	5/25	14:30	W		✓									
M33S	34	5/25	14:15	W		✓									
SW D	35	5/25	15:45	SW		✓							✓	✓	
SW B	36	5/25	16:10	SW		✓							✓	✓	
M27D	37	5/25	17:12	GW		✓							✓	✓	
M27S	38	5/25	17:30	GW		✓							✓	✓	
SW A	39	5/25	18:15	SW		✓							✓	✓	
135	40	5/25	15:15	W		✓							✓	✓	

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 24 hr ____ 48 hr ____ 5 day
____ STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
____ V. Specialized Forms / Custom Report
Edata ____ Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature: Heather Lovejoy	Signature	Signature	Signature	Signature
Printed Name	Printed Name: Heather Lovejoy	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time	Date/Time: 5/26/04 930	Date/Time	Date/Time	Date/Time	Date/Time

SCOC-1102-08

White - Return to Originator Yellow - Lab Copy Pink - Retained by Client

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services, INC.
An Employee - Owned Company
www.caslab.com

One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (585) 288-5380 • 800-695-7222 x11 • FAX (585) 288-8475 PAGE _____ OF _____

SR #

CAS Contact

Project Name: MKFA	Project Number:
Project Manager: Brian Neumann	Report CC:
Company/Address: Shaw Env. 13 British American Blvd Latham NY 12110	
Phone #: 518 783 1996	FAX#:
Sampler's Signature:	Sampler's Printed Name: Anthony Perretta

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	CV	CV						REMARKS/ ALTERNATE DESCRIPTION
MW275MS	730338	5/25		GW		✓							✓	✓						
MW275MSD	↓	5/25		GW		✓							✓	✓						
Duplicate	41	5/25		GW		✓							✓	✓						

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 24 hr ____ 48 hr ____ 5 day
__X__ STANDARD
REQUESTED FAX DATE
_____
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
__X__ IV. Data Validation Report with Raw Data
____ V. Specialized Forms / Custom Report
Edata ____ Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature Heather Vargo	Signature	Signature	Signature	Signature
Printed Name	Printed Name Heather Vargo	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm QAS	Firm	Firm	Firm	Firm
Date/Time	Date/Time 5/26/04 930	Date/Time	Date/Time	Date/Time	Date/Time

SCOC-1102-08

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

Cooler Receipt And Preservation Check Form

Project/Client Shaw Submission Number 82-21509

Cooler received on 5/26/04 by: CSP COURIER: CAS UPS (FEDEX) CD&L CLIENT

1.	Were custody seals on outside of cooler?	(YES)	NO			
2.	Were custody papers properly filled out (ink, signed, etc.)?	(YES)	NO			
3.	Did all bottles arrive in good condition (unbroken)?	(YES)	NO			
4.	Did any VOA vials have significant air bubbles?	YES	(NO)	N/A		
5.	Were **Ice** or **Ice packs** present?	(YES)	NO			
6.	Where did the bottles originate?	(CAS/ROC)	CLIENT			
7.	Temperature of cooler(s) upon receipt:	6				
	Is the temperature within 0° - 6° C?:	(Yes)	Yes	Yes	Yes	Yes
	If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: 5/26/04 950

Thermometer ID: 161 or (IR GUN) Reading From: Temp Blank or (Sample Bottle)

If out of Temperature, Client Approval to Run Samples _____

Cooler Breakdown: Date: 5/27/04 by: CSP

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO
4.	Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated		(N/A)

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3	✓				
2	H_2SO_4					
Residual Chlorine (+/-)	for TCN & Phenol					
5-9**	P/PCBs (608 only)					

YES = 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_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

Other Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SYSTEM INFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730317

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4675

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	chloromethane		1.0	U
75-01-4	vinyl chloride		1.0	U
74-83-9	bromomethane		1.0	U
75-00-3	chloroethane		1.0	U
75-69-4	Trichlorofluoromethane		1.0	U
75-35-4	1,1-dichloroethene		1.0	U
67-64-1	acetone		5.0	U J
75-15-0	carbon disulfide		1.0	U
75-34-3	1,1-dichloroethane		1.0	U
75-09-2	methylene chloride		1.0	U
156-59-2	cis-1,2-Dichloroethene		1.0	U
156-60-5	trans-1,2-dichloroethene		1.0	U
67-66-3	chloroform	1.0	~~0.99~~ J	U
78-93-3	2-butanone		5.0	U J
74-97-5	bromochloromethane		1.0	U
71-55-6	1,1,1-trichloroethane		1.0	U
56-23-5	carbontetrachloride		10.3	
71-43-2	benzene		1.0	U
107-06-2	1,2-dichloroethane		1.0	U
79-01-6	trichloroethene		13.7	
78-87-5	1,2-dichloropropane		1.0	U
75-27-4	bromodichloromethane		1.0	U
10061-01-5	cis-1,3-dichloropropene		1.0	U
108-10-1	4-methyl-2-pentanone		5.0	U
108-88-3	toluene		1.0	U
10061-02-6	trans-1,3-dichloropropene		1.0	U
79-00-5	1,1,2-trichloroethane		1.0	U
127-18-4	tetrachloroethene		0.15	J
591-78-6	2-hexanone		5.0	U
124-48-1	dibromochloromethane		1.0	U
106-93-4	1,2-Dibromoethane		1.0	U
108-90-7	chlorobenzene		1.0	U
100-41-4	ethylbenzene		1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SYSTEM INFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730317

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4675

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SYSTEM INFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730317

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4675

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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6.					
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30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SYSTEM EFFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730463

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4693

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	chloromethane		1.0	U
75-01-4	vinyl chloride		1.0	U
74-83-9	bromomethane		1.0	U
75-00-3	chloroethane		1.0	U
75-69-4	Trichlorofluoromethane		1.0	U
75-35-4	1,1-dichloroethene		1.0	U
67-64-1	acetone		5.0	UJ
75-15-0	carbon disulfide		1.0	U
75-34-3	1,1-dichloroethane		1.0	U
75-09-2	methylene chloride		1.0	U
156-59-2	cis-1,2-Dichloroethene		1.0	U
156-60-5	trans-1,2-dichloroethene		1.0	U
67-66-3	chloroform	1.0	~~0.13~~ JB	U
78-93-3	2-butanone		5.0	UJ
74-97-5	bromochloromethane		1.0	U
71-55-6	1,1,1-trichloroethane		1.0	U
56-23-5	carbontetrachloride		1.0	U
71-43-2	benzene		1.0	U
107-06-2	1,2-dichloroethane		1.0	U
79-01-6	trichloroethene		1.0	U
78-87-5	1,2-dichloropropane		1.0	U
75-27-4	bromodichloromethane		1.0	U
10061-01-5	cis-1,3-dichloropropene		1.0	U
108-10-1	4-methyl-2-pentanone		5.0	U
108-88-3	toluene		1.0	U
10061-02-6	trans-1,3-dichloropropene		1.0	U
79-00-5	1,1,2-trichloroethane		1.0	U
127-18-4	tetrachloroethene		1.0	U
591-78-6	2-hexanone		5.0	U
124-48-1	dibromochloromethane		1.0	U
106-93-4	1,2-Dibromoethane		1.0	U
108-90-7	chlorobenzene		1.0	U
100-41-4	ethylbenzene		1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SYSTEM EFFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730463

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4693

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SYSTEM EFFLUENT

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730463

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4693

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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7.					
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APPENDIX B

LABORATORY DATA, GROUNDWATER SAMPLES AND SURFACE WATER SAMPLES

May 25, 2004

1 Mustard Street, Suite 250 Rochester, NY 14609-6925 (585) 288-5380 (585) 288-8475 fax

Columbia Analytical Services INC
An Employee - Owned Company

July 12, 2004

Mr. Brian Neumann
Shaw Environmental
13 British American Blvd.
Latham, NY 12110

Re: MRFA
Submission # R2421508
SDG # DGC-4S

Dear Mr. Neumann:

Enclosed is the analytical data report for the above referenced facility. A total of fourteen samples were received by our laboratory on May 26, 2004.

Any problems encountered with this project are addressed in a case narrative section which is presented later in this report.

This report consists of two (2) packages: the sample data package and the sample data summary package. The data package and summary package have been mailed to Judy Harry and the summary package only has been mailed to your attention and to Steve Meier. All data presented in this package has been reviewed prior to report submission. If you should have any questions or concerns, please contact me at (585) 288-5380.

Thank you for your continued use of our services.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Janice M. Jaeger
Project Chemist

enc.

cc: Ms. Judy Harry
Data Validation Services
Cobble Creek Road
North Creek, NY 12853

cc: Mr. Steve Meier
GE Corporate Environmental Programs
320 Great Oaks Blvd.
Suite 323
Albany, NY 12203

Columbia Analytical Services, Inc.

1 Mustard ST.
Suite 250
Rochester, NY 14609
(585) 288-5380

THIS IS AN ANALYTICAL TEST REPORT FOR:

Client	: Shaw Environmental
Project Reference	: MRFA
Lab Submission #	: R2421508
Project Manager	: Janice Jaeger
Reported	: 07/06/04

Report Contains a total of 92 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. Michael E. Perry

CASE NARRATIVE

COMPANY: Shaw Environmental
MRFA
SUBMISSION #: R2421508

Shaw water samples were collected on 05/25/04 and received at CAS on 05/26/04 in good condition at a cooler temperature of 6 C.

INORGANICS

Five water samples were analyzed for Total Chromium by CLP methods and Hexavalent Chromium by 7199.

Site specific QC was performed on M-27S. All MS and Blank spike recoveries were within limits. All RPD's were within limits.

Due to an instrument malfunction, the Hexavalent Chromium samples could not be analyzed by method 7196A and were analyzed by method 7199 as mentioned above and also were analyzed slightly outside the 24 hour holding time.

No other analytical or QC problems were encountered.

VOLATILE ORGANICS

Thirteen water samples, one cooler blank and one trip blanks were analyzed for a Site Specific List of Volatiles by method OLC 2.1.

All Tuning criteria for BFB were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within limits.

All surrogate standard recoveries were within limits.

All samples were analyzed within required holding times.

Site specific QC was performed on M-27S. All MS/MSD recoveries were within limits. All Blank Spike recoveries were within limits. All RPD's were within limits.

The Laboratory Blanks associated with these samples were free of contamination except VBLK01 contained a low level hit for Methylene Chloride and VBLK02 had a low level hit for Chloroform. All affecte data has been flagged with a "B".

No other analytical or QC problems were encountered.

PERCHLORATE

Water samples were subcontacted to CAS-Kelso for Perchlorate analysis. Their complete data package follows.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in the hard copy package has been authorized by the Laboratory Manager or his designee, as verified by the following signature;

CAS ASP/CLP BATCHING FORM / LOGIN SHEET

SDG #: DGC-4S
SUBMISSION R2421508
CLIENT: Shaw Environmental
CLIENT REP: Janice Jaeger
PROJECT: MRFA

BATCH COMPLETE: __yes_____
DISKETTE REQUESTED: Y__X_ N____
DATE: 05/28/04
CUSTODY SEAL: PRESENT/ABSENT:
CHAIN OF CUSTODY: PRESENT/ABSENT:

DATE REVISED:
DATE DUE: 06/23/04
PROTOCOL: CLP
SHIPPING No.:
SUMMARY PKG: Y___X_ N

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS	REMARKS SAMPLE CONDITION
730317	SYSTEM INFLUENT	WATER	OLC2.1VOA*	5/25/04	5/26/04			
730331	DGC-4S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730332	DGC-3S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730333	M33I	WATER	OLC2.1VOA	5/25/04	5/26/04			
730334	M33S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730335	SW D	WATER	OLC2.1VOA	5/25/04	5/26/04			
730336	SW B	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730337	M27D	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730338QC	M27S	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730339	SW A	WATER	OLC2.1VOA	5/25/04	5/26/04			
730340	13S	WATER	CR6,CR	5/25/04	5/26/04			
730341	DUPLICATE	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730342	COOLER BLANK	WATER	OLC2.1VOA	5/25/04	5/26/04			
730463	SYSTEM EFFLUENT	WATER	OLC2.1VOA	5/25/04	5/26/04			
731049	TRIP BLANK	WATER	OLC2.1VOA	5/25/04	5/28/04 2			
			* perchlorate subtotals					

Columbia Analytical Services INC.
An Employee - Owned Company

ACCREDITED IN ACCORDANCE WITH nelac

Ethics Service Quality ACIL 2003 SEAL OF EXCELLENCE PROGRAM Environmental

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 a 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 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.

* - This flag identifies compounds associated with a quality control parameter which exceeds laboratory limits.

CAS/Rochester Lab ID # for State Certifications

Army Corp of Engineers Validated
Delaware Accredited
Connecticut ID # PH0556
Florida ID # E87674
Massachusetts ID # M-NY032
Navy Facilities Engineering Service Center Approved
Nebraska Accredited
NELAP Accredited
New York ID # 10145
New Jersey ID # NY004
New Hampshire ID # 294100 A/B
Pennsylvania Registration 68-786
Rhode Island ID # 158
South Carolina ID #91012
West Virginia ID # 292

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Ethics Service Quality ACIL 2003 SEAL OF EXCELLENCE PROGRAM Environmental

INORGANIC QUALIFIERS

C (Concentration) qualifier –

- B - if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL).
- U - if the analyte was analyzed for, but not detected

Q qualifier - Specified entries and their meanings are as follows:

- D - Spike was diluted out
- E - The reported value is estimated because of the presence of interference.
- J - Estimated Value
- M - Duplicate injection precision not met.
- N - Spiked sample recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Post-digestion spike for Furnace AA Analysis is out of control limits (85-115), while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis not within control limits.
- + - Correlation coefficient for the MSA is less than 0.995.

M (Method) qualifier:

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "PM" for ICP when Microwave Digestion is used
- "AM" for Flame AA when Microwave Digestion is used
- "FM" for Furnace M when Microwave Digestion is used
- "CV" for Manual Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "CA" for Midi-Distillation Spectrophotometric
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- " " where no data has been entered
- "NR" if the analyte is not required to be analyzed.

CAS/Rochester Lab ID # for State Certifications

Army Corp of Engineers Validated
Delaware Accredited
Connecticut ID # PH0556
Florida ID # E87674
Massachusetts ID # M-NY032
Navy Facilities Engineering Service Center Approved
Nebraska Accredited
NELAP Accredited
New York ID # 10145
New Jersey ID # NY004
New Hampshire ID # 294100 A/B
Pennsylvania Registration 68-786
Rhode Island ID # 158
South Carolina ID #91012
West Virginia ID # 292

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PAGE 1 OF 1

SR #
CAS Contact

Project Name: MKFA	Project Number:
Project Manager: Brian Neumann	Report CC:
Company/Address: Shaw Environmental, 13 British American BLVD, Latham NY 12110	
Phone #: 518 783	FAX#:
Sampler's Signature:	Sampler's Printed Name:

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☒ CLP OLC2.1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602 TCL	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below) Cr Cr+6	524.2	504	Perchlorate	odor	Dioxins	Nav 502 CF	Chloroform	REMARKS/ ALTERNATE DESCRIPTION
System Influent	730317	5/25	8:55	W									✓	✓	✓					
System Effluent	↓ 18	5/25	9:00	W				✓			✓	✓	✓	✓		✓	✓	✓	✓	

System Influent with R242/508

system influent 730317 ✗ — analyze system influent for OLC2.1 VOA + perchlorate &

system effluent 730403 ✗ — system effluent for OLC2.1 VOA as per

SPECIAL INSTRUCTIONS/COMMENTS
Metals – Cu Pb only
504 Hexachlorobutadiene (DOH samples)
1,2,3 Trichlorobenzene
Trichlorofluoromethane

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 24 hr ___ 48 hr ___ 5 day
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
___ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
John Skwarup (struck through) JMW
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: ______ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: [signature]	Signature: [signature]	Signature	Signature	Signature	Signature
Printed Name: Anthony Pruella	Printed Name: [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm: Shaw	Firm: [illegible]	Firm	Firm	Firm	Firm
Date/Time: [illegible]	Date/Time: [illegible]	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-1102-08

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SR #

CAS Contact

Project Name: MCFA	Project Number:
Project Manager: Brian Neumann	Report CC:
Company/Address: Shaw Env. Inc 13 British American BLVD Latham NY 12110	
Phone #: 518-783-1996	FAX#: 518 783-8397
Sampler's Signature:	Sampler's Printed Name: Anthony Perretta

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE

NUMBER OF CONTAINERS

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Cr	Cr +6	REMARKS/ ALTERNATE DESCRIPTION
DEC-45	730331	5/25	13:01	W	✓									
DGC-35	32	5/25	13:35	W	✓									
M33I	33	5/25	14:30	W	✓									
M33S	34	5/25	14:15	W	✓									
SW D	35	5/25	15:45	SW	✓							✓	✓	
SW B	36	5/25	16:10	SW	✓							✓	✓	
M27D	37	5/25	17:12	GW	✓							✓	✓	
M27S	38	5/25	17:30	GW	✓							✓	✓	
SW A	39	5/25	18:15	SW	✓							✓	✓	
135	40	5/25	15:15	W	✓							✓	✓	

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 24 hr ____ 48 hr ____ 5 day
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
____ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
____ V. Speicalized Forms / Custom Report
Edata ____ Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature: Heather Lovejoy	Signature	Signature	Signature	Signature
Printed Name	Printed Name: Heather Lovejoy	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time	Date/Time: 5/26/04 930	Date/Time	Date/Time	Date/Time	Date/Time

SCOC-1102-08

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PAGE _____ OF _____

SR #

CAS Contact

Project Name: MKFA	Project Number:
Project Manager: Brian Neumann	Report CC:
Company/Address: Shaw Env. 13 British American BLVD Latham NY 12110	
Phone #: 518 783 1996	FAX#:
Sampler's Signature:	Sampler's Printed Name: Anthony Perretta

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

NUMBER OF CONTAINERS

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	GC/MS VOA's ☐8260 ☐624 ☐CLP	GC/MS SVOA's ☐8270 ☐625 ☐CLP	GC VOA's ☐8021 ☐601/602	PESTICIDES ☐8081 ☐608 ☐CLP	PCB's ☐8082 ☐608 ☐CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	CV Hg	CV Hg	REMARKS/ ALTERNATE DESCRIPTION
m27s ms	730338	5/25		GW	✓							✓	✓	
m27s MSD	↓	5/25		GW	✓							✓	✓	
Duplicate	41	5/25		GW	✓							✓	✓	

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 24 hr _____ 48 hr _____ 5 day
☒ STANDARD
REQUESTED FAX DATE
_____
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
☒ IV. Data Validation Report with Raw Data
_____ V. Speicalized Forms / Custom Report
Edata _____ Yes _____ No

INVOICE INFORMATION
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name	Printed Name Heather Lovejoy	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm CAS	Firm	Firm	Firm	Firm
Date/Time	Date/Time 5/26/04 930	Date/Time	Date/Time	Date/Time	Date/Time

SCOC-1102-08

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

Cooler Receipt And Preservation Check Form

Project/Client Shaw Submission Number 82-21508.

Cooler received on 5/26/04 by: CDP COURIER: CAS UPS (FEDEX) CD&L CLIENT

1.	Were custody seals on outside of cooler?	(YES)	NO	
2.	Were custody papers properly filled out (ink, signed, etc.)?	(YES)	NO	
3.	Did all bottles arrive in good condition (unbroken)?	(YES)	NO	
4.	Did any VOA vials have significant air bubbles?	YES	(NO)	N/A
5.	Were **Ice** or **Ice packs** present?	(YES)	NO	
6.	Where did the bottles originate?	(CAS/ROC)	CLIENT	

7. Temperature of cooler(s) upon receipt:	6				
Is the temperature within 0° - 6° C?:	(Yes)	Yes	Yes	Yes	Yes
If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: 5/26/04 950

Thermometer ID: 161 or (IR GUN) Reading From: Temp Blank or (Sample Bottle)

If out of Temperature, Client Approval to Run Samples_____

Cooler Breakdown: Date: 5/28/04 by: CDP

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO
4.	Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated		(N/A)

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3	✓				
2	H_2SO_4					
Residual Chlorine (+/-)	for TCN & Phenol					
5-9**	P/PCBs (608 only)					

YES = 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_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

Other Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DGC-4S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730331

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4676

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DGC-4S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730331

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4676

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DGC-4S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730331

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4676

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DGC-3S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730332

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4677

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DGC-3S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730332

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4677

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DGC-3S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730332

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4677

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

M33I

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730333

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4678

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	UJ
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	UJ
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M33I

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730333

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4678

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

M33I

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730333

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4678

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

M33S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730334

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4679

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	UJ
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	UJ
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M33S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730334

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4679

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

M33S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730334

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4679

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

SW D

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730335

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4680

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW D

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730335

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4680

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SW D

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730335

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4680

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

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

EPA SAMPLE NO.

SW B

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730336

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4681

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	chloromethane		1.0	U
75-01-4	vinyl chloride		1.0	U
74-83-9	bromomethane		1.0	U
75-00-3	chloroethane		1.0	U
75-69-4	Trichlorofluoromethane		1.0	U
75-35-4	1,1-dichloroethene		1.0	U
67-64-1	acetone		5.0	UJ
75-15-0	carbon disulfide		1.0	U
75-34-3	1,1-dichloroethane		1.0	U
75-09-2	methylene chloride		1.0	U
156-59-2	cis-1,2-Dichloroethene		1.0	U
156-60-5	trans-1,2-dichloroethene		1.0	U
67-66-3	chloroform	1.0	~~0.20~~	J U
78-93-3	2-butanone		5.0	UJ
74-97-5	bromochloromethane		1.0	U
71-55-6	1,1,1-trichloroethane		1.0	U
56-23-5	carbontetrachloride		0.38	J
71-43-2	benzene		1.0	U
107-06-2	1,2-dichloroethane		1.0	U
79-01-6	trichloroethene		0.28	J
78-87-5	1,2-dichloropropane		1.0	U
75-27-4	bromodichloromethane		1.0	U
10061-01-5	cis-1,3-dichloropropene		1.0	U
108-10-1	4-methyl-2-pentanone		5.0	U
108-88-3	toluene		1.0	U
10061-02-6	trans-1,3-dichloropropene		1.0	U
79-00-5	1,1,2-trichloroethane		1.0	U
127-18-4	tetrachloroethene		1.0	U
591-78-6	2-hexanone		5.0	U
124-48-1	dibromochloromethane		1.0	U
106-93-4	1,2-Dibromoethane		1.0	U
108-90-7	chlorobenzene		1.0	U
100-41-4	ethylbenzene		1.0	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW B

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730336

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4681

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SW B

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730336

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4681

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

M27D

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730337

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4694

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	chloromethane		1.0	U
75-01-4	vinyl chloride		1.0	U
74-83-9	bromomethane		1.0	U
75-00-3	chloroethane		1.0	U
75-69-4	Trichlorofluoromethane		0.27	J
75-35-4	1,1-dichloroethene		1.0	U
67-64-1	acetone		5.0	U J
75-15-0	carbon disulfide		1.0	U
75-34-3	1,1-dichloroethane		1.0	U
75-09-2	methylene chloride		1.0	U
156-59-2	cis-1,2-Dichloroethene		1.0	U
156-60-5	trans-1,2-dichloroethene		1.0	U
67-66-3	chloroform	1.0	~~0.53~~ JB	~~JB~~ U
78-93-3	2-butanone		5.0	U J
74-97-5	bromochloromethane		1.0	U
71-55-6	1,1,1-trichloroethane		1.0	U
56-23-5	carbontetrachloride		3.0	
71-43-2	benzene		1.0	U
107-06-2	1,2-dichloroethane		1.0	U
79-01-6	trichloroethene		3.2	
78-87-5	1,2-dichloropropane		1.0	U
75-27-4	bromodichloromethane		1.0	U
10061-01-5	cis-1,3-dichloropropene		1.0	U
108-10-1	4-methyl-2-pentanone		5.0	U
108-88-3	toluene		1.0	U
10061-02-6	trans-1,3-dichloropropene		1.0	U
79-00-5	1,1,2-trichloroethane		1.0	U
127-18-4	tetrachloroethene		1.0	U
591-78-6	2-hexanone		5.0	U
124-48-1	dibromochloromethane		1.0	U
106-93-4	1,2-Dibromoethane		1.0	U
108-90-7	chlorobenzene		1.0	U
100-41-4	ethylbenzene		1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27D

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730337

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4694

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

M27D

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730337

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4694

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	12.43	1.2	J
2.	1120-21-4	UNDECANE	12.90	0.72	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4689

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	chloromethane		1.0	U
75-01-4	vinyl chloride		1.0	U
74-83-9	bromomethane		1.0	U
75-00-3	chloroethane		1.0	U
75-69-4	Trichlorofluoromethane		1.0	U
75-35-4	1,1-dichloroethene		1.0	U
67-64-1	acetone		5.0	U J
75-15-0	carbon disulfide		1.0	U
75-34-3	1,1-dichloroethane		1.0	U
75-09-2	methylene chloride		1.0	U
156-59-2	cis-1,2-Dichloroethene		1.0	U
156-60-5	trans-1,2-dichloroethene		1.0	U
67-66-3	chloroform	1.0	~~0.15~~	~~JB~~ U
78-93-3	2-butanone		5.0	U J
74-97-5	bromochloromethane		1.0	U
71-55-6	1,1,1-trichloroethane		1.0	U
56-23-5	carbontetrachloride		0.10	J
71-43-2	benzene		1.0	U
107-06-2	1,2-dichloroethane		1.0	U
79-01-6	trichloroethene		1.0	U
78-87-5	1,2-dichloropropane		1.0	U
75-27-4	bromodichloromethane		1.0	U
10061-01-5	cis-1,3-dichloropropene		1.0	U
108-10-1	4-methyl-2-pentanone		5.0	U
108-88-3	toluene		1.0	U
10061-02-6	trans-1,3-dichloropropene		1.0	U
79-00-5	1,1,2-trichloroethane		1.0	U
127-18-4	tetrachloroethene		1.0	U
591-78-6	2-hexanone		5.0	U
124-48-1	dibromochloromethane		1.0	U
106-93-4	1,2-Dibromoethane		1.0	U
108-90-7	chlorobenzene		1.0	U
100-41-4	ethylbenzene		1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4689

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

M27S

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4689

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW A

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730339

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4682

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW A

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730339

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4682

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SW A

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730339

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4682

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730341

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4691

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	0.29	J
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	UJ
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0 ~~0.55~~	~~JB~~U
78-93-3	2-butanone	5.0	UJ
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	2.7	
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	2.9	
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730341

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4691

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

DUPLICATE

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730341

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4691

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	12.43	0.71	J
2.	1120-21-4	UNDECANE	12.90	0.80	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

COOLER BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730342

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4702

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	0.18	JB
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

COOLER BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730342

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4702

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

COOLER BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730342

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4702

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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18.					
19.					
20.					
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22.					
23.					
24.					
25.					
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27.					
28.					
29.					
30.					

FORM I VOA-TIC

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

TRIP BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 731049

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4692

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U J
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	0.16	JB
78-93-3	2-butanone	5.0	U J
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 731049

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4692

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 731049

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4692

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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FORM I VOA-TIC

METALS
COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Contract: R2421508 SDG No.: DGC-4A

Lab Code: Case No.: SAS No.:

SOW No.: CLP ILM4.1 Client: Shaw Environmental

Sample No.	Lab Sample ID.
SW B	730336
M27D	730337
M27S	730338
M27SD	730338D
M27SS	730338S
13S	730340
DUPLICATE	730341

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments: See Attached Case Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Michael K. Perry Name: Michael K. Perry

Date: 7/12/04 Title: Laboratory Manager

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.: 13S

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Lab Sample ID: 730340

Level (low/med): LOW Date Received: 05/26/04

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

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	20.1			P

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
DUPLICATE

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Lab Sample ID: 730341

Level (low/med): LOW Date Received: 05/26/04

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

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	21.3			P

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

M27D

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Lab Sample ID: 730337

Level (low/med): LOW Date Received: 05/26/04

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

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	22.6			P

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.
M27S

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Lab Sample ID: 730338

Level (low/med): LOW Date Received: 05/26/04

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

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	83.1			P

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

SW B

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Lab Sample ID: 730336

Level (low/med): LOW Date Received: 05/26/04

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

CAS No.	Analyte	Concentration	C	Q	M
7440-47-3	Chromium	2.1	B		P

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

COLUMBIA ANALYTICAL SERVICES

Reported: 07/12/04

Shaw Environmental
Project Reference: MRFA
Client Sample ID : SW B

Date Sampled : 05/25/04 16:10 **Order #:** 730336 **Sample Matrix:** WATER
Date Received: 05/26/04 **Submission #:** R2421508

ANALYTE	METHOD	PQL	RESULT	UNITS	DATE ANALYZED	TIME ANALYZED	DILUTION
HEXAVALENT CHROMIUM	7199	0.0100	0.0100 U J	MG/L	05/26/04	21:57	1.0

COLUMBIA ANALYTICAL SERVICES

Reported: 07/12/04

Shaw Environmental
Project Reference: MRFA
Client Sample ID : M27D

Date Sampled : 05/25/04 17:12 **Order #:** 730337 **Sample Matrix:** WATER
Date Received: 05/26/04 **Submission #:** R2421508

ANALYTE	METHOD	PQL	RESULT	UNITS	DATE ANALYZED	TIME ANALYZED	DILUTION
HEXAVALENT CHROMIUM	7199	0.0100	0.0100 U J	MG/L	05/26/04	22:06	1.0

COLUMBIA ANALYTICAL SERVICES

Reported: 07/12/04

Shaw Environmental
Project Reference: MRFA
Client Sample ID : M27S

Date Sampled : 05/25/04 17:30 **Order #:** 730338 **Sample Matrix:** WATER
Date Received: 05/26/04 **Submission #:** R2421508

ANALYTE	METHOD	PQL	RESULT	UNITS	DATE ANALYZED	TIME ANALYZED	DILUTION
HEXAVALENT CHROMIUM	7199	0.0100	0.0100 U J	MG/L	05/26/04	22:15	1.0

COLUMBIA ANALYTICAL SERVICES

Reported: 07/12/04

Shaw Environmental
Project Reference: MRFA
Client Sample ID : 13S

Date Sampled : 05/25/04 15:10 **Order #:** 730340 **Sample Matrix:** WATER
Date Received: 05/26/04 **Submission #:** R2421508

ANALYTE	METHOD	PQL	RESULT	UNITS	DATE ANALYZED	TIME ANALYZED	DILUTION
HEXAVALENT CHROMIUM	7199	0.0100	0.0110 J	MG/L	05/26/04	22:43	1.0

COLUMBIA ANALYTICAL SERVICES

Reported: 07/12/04

Shaw Environmental
Project Reference: MRFA
Client Sample ID : DUPLICATE

Date Sampled : 05/25/04 **Order #:** 730341 **Sample Matrix:** WATER
Date Received: 05/26/04 **Submission #:** R2421508

ANALYTE	METHOD	PQL	RESULT	UNITS	DATE ANALYZED	TIME ANALYZED	DILUTION
HEXAVALENT CHROMIUM	7199	0.0100	0.0100 U J	MG/L	05/26/04	22:53	1.0

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Shaw Environmental and Infrastructure
Project Name: NA
Project Number: MFRA
Sample Matrix: WATER

Service Request: K2403905
Date Collected: 05/25/04
Date Received: 05/26/04

Perchlorate

Units: ug/L (ppb)
Basis: NA

Analysis Method: 314.0
Test Notes:

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
System Influent	K2403905-001	2.0	0.5	1	06/09/04	ND	
Method Blank	K2403905-MB	2.0	0.5	1	06/09/04	ND	

Report By: BReller

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

	EPA SAMPLE NO.	SMC1 (BFB) #	SMC2 #	SMC3 #	OTHER	TOT OUT
01	VBLK01	82				0
02	VLK01MS	100				0
03	SYSTEM INFLU	84				0
04	DGC-4S	84				0
05	DGC-3S	80				0
06	M33I	86				0
07	M33S	84				0
08	SW D	80				0
09	SW B	80				0
10	SW A	80				0
11	VBLK02	92				0
12	VBLK02MS	100				0
13	M27S	90				0
14	DUPLICATE	94				0
15	TRIP BLANK	94				0
16	SYSTEM EFFLU	92				0
17	M27D	86				0
18	M27SMS	94				0
19	M27SMSD	96				0
20	COOLER BLANK	92				0
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

QC LIMITS

SMC1 (BFB) = bromofluorobenzene (80-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix Spike - EPA Sample No.: M27S

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC #	QC. LIMITS REC.
vinyl chloride	5.0	0.00	4.5	90	60-140
carbontetrachloride	5.0	0.10	5.1	100	60-140
benzene	5.0	0.00	4.8	96	60-140
1,2-dichloroethane	5.0	0.00	4.4	88	60-140
trichloroethene	5.0	0.00	4.9	98	60-140
1,2-dichloropropane	5.0	0.00	4.6	92	60-140
cis-1,3-dichloropropene	5.0	0.00	4.5	90	60-140
1,1,2-trichloroethane	5.0	0.00	4.5	90	60-140
tetrachloroethene	5.0	0.00	4.7	94	60-140
1,2-Dibromoethane	5.0	0.00	4.7	94	60-140
bromoform	5.0	0.00	5.1	102	60-140
1,4-Dichlorobenzene	5.0	0.00	4.9	98	60-140

COMPOUND	SPIKE ADDED (ug/l)	MSD CONCENTRATION (ug/l)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
vinyl chloride	5.0	4.7	94	4	20	60-140
carbontetrachloride	5.0	5.1	100	0	20	60-140
benzene	5.0	4.8	96	0	20	60-140
1,2-dichloroethane	5.0	4.4	88	0	20	60-140
trichloroethene	5.0	4.9	98	0	20	60-140
1,2-dichloropropane	5.0	4.6	92	0	20	60-140
cis-1,3-dichloropropene	5.0	4.5	90	0	20	60-140
1,1,2-trichloroethane	5.0	4.6	92	2	20	60-140
tetrachloroethene	5.0	4.8	96	2	20	60-140
1,2-Dibromoethane	5.0	4.4	88	6	20	60-140
bromoform	5.0	5.4	108	6	20	60-140
1,4-Dichlorobenzene	5.0	5.1	102	4	20	60-140

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

* Values outside of QC limits

RPD: 0 out of 12 outside limits
Spike Recovery: 0 out of 24 outside limits

COMMENTS: _____

FORM III VOA-1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27SMS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338MS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4695

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	4.6	
75-01-4	vinyl chloride	4.5	
74-83-9	bromomethane	3.1	
75-00-3	chloroethane	4.5	
75-69-4	Trichlorofluoromethane	5.1	
75-35-4	1,1-dichloroethene	5.1	
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	4.7	
75-09-2	methylene chloride	4.5	
156-59-2	cis-1,2-Dichloroethene	4.9	
156-60-5	trans-1,2-dichloroethene	4.5	
67-66-3	chloroform	4.5	~~B~~ (R 6/14 *)
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	4.3	
71-55-6	1,1,1-trichloroethane	4.6	
56-23-5	carbontetrachloride	5.1	
71-43-2	benzene	4.8	
107-06-2	1,2-dichloroethane	4.4	
79-01-6	trichloroethene	4.9	
78-87-5	1,2-dichloropropane	4.6	
75-27-4	bromodichloromethane	5.0	
10061-01-5	cis-1,3-dichloropropene	4.5	
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	4.7	
10061-02-6	trans-1,3-dichloropropene	4.8	
79-00-5	1,1,2-trichloroethane	4.5	
127-18-4	tetrachloroethene	4.7	
591-78-6	2-hexanone	0.20	J
124-48-1	dibromochloromethane	4.8	
106-93-4	1,2-Dibromoethane	4.7	
108-90-7	chlorobenzene	4.5	
100-41-4	ethylbenzene	4.8	

* target hit greater than 5x contamination

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27SMS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338MS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4695

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	9.6	
1330-20-7	o-xylene	4.7	
100-42-5	styrene	4.6	
75-25-2	bromoform	5.1	
79-34-5	1,1,2,2-tetrachloroethane	4.4	
541-73-1	1,3-Dichlorobenzene	4.7	
106-46-7	1,4-Dichlorobenzene	4.9	
95-50-1	1,2-Dichlorobenzene	4.7	
96-12-8	1,2-dibromo-3-chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	4.2	
87-68-3	Hexachlorobutadiene	3.3	
87-61-6	1,2,3-Trichlorobenzene	4.6	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27SMSD

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338MSD

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4696

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	chloromethane	4.8		
75-01-4	vinyl chloride	4.7		
74-83-9	bromomethane	3.2		
75-00-3	chloroethane	4.4		
75-69-4	Trichlorofluoromethane	5.1		
75-35-4	1,1-dichloroethene	5.0		
67-64-1	acetone	5.0	U	
75-15-0	carbon disulfide	1.0	U	
75-34-3	1,1-dichloroethane	4.6		
75-09-2	methylene chloride	4.4		
156-59-2	cis-1,2-Dichloroethene	5.0		
156-60-5	trans-1,2-dichloroethene	4.5		
67-66-3	chloroform	4.6	B	✓ 6/14
78-93-3	2-butanone	5.0	U	
74-97-5	bromochloromethane	4.3		
71-55-6	1,1,1-trichloroethane	4.7		
56-23-5	carbontetrachloride	5.1		
71-43-2	benzene	4.8		
107-06-2	1,2-dichloroethane	4.4		
79-01-6	trichloroethene	4.9		
78-87-5	1,2-dichloropropane	4.6		
75-27-4	bromodichloromethane	4.8		
10061-01-5	cis-1,3-dichloropropene	4.5		
108-10-1	4-methyl-2-pentanone	5.0	U	
108-88-3	toluene	4.7		
10061-02-6	trans-1,3-dichloropropene	4.7		
79-00-5	1,1,2-trichloroethane	4.6		
127-18-4	tetrachloroethene	4.8		
591-78-6	2-hexanone	5.0	U	
124-48-1	dibromochloromethane	4.6		
106-93-4	1,2-Dibromoethane	4.4		
108-90-7	chlorobenzene	4.6		
100-41-4	ethylbenzene	4.9		

* target hit greater than 5x contamination

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M27SMSD

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: 730338MSD

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4696

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	9.7	
1330-20-7	o-xylene	4.6	
100-42-5	styrene	4.6	
75-25-2	bromoform	5.4	
79-34-5	1,1,2,2-tetrachloroethane	4.5	
541-73-1	1,3-Dichlorobenzene	5.0	
106-46-7	1,4-Dichlorobenzene	5.1	
95-50-1	1,2-Dichlorobenzene	4.8	
96-12-8	1,2-dibromo-3-chloropropane	4.6	
120-82-1	1,2,4-Trichlorobenzene	4.7	
87-68-3	Hexachlorobutadiene	4.0	
87-61-6	1,2,3-Trichlorobenzene	5.3	

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix Spike - EPA Sample No.: VLK01

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/l)	MS % REC #	QC. LIMITS REC.
vinyl chloride	5.0		5.3	106	60-140
carbontetrachloride	5.0		5.0	100	60-140
benzene	5.0		5.2	104	60-140
1,2-dichloroethane	5.0		5.1	102	60-140
trichloroethene	5.0		5.1	102	60-140
1,2-dichloropropane	5.0		5.3	106	60-140
cis-1,3-dichloropropene	5.0		4.7	94	60-140
1,1,2-trichloroethane	5.0		5.1	102	60-140
tetrachloroethene	5.0		4.9	98	60-140
1,2-Dibromoethane	5.0		5.2	104	60-140
bromoform	5.0		4.8	96	60-140
1,4-Dichlorobenzene	5.0		5.1	102	60-140

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VLK01MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: ICV/LCS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4674

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-87-3	chloromethane	5.2		
75-01-4	vinyl chloride	5.3		
74-83-9	bromomethane	3.6		
75-00-3	chloroethane	5.0		
75-69-4	Trichlorofluoromethane	5.3		
75-35-4	1,1-dichloroethene	4.9		
67-64-1	acetone	5.0	U	
75-15-0	carbon disulfide	1.0	U	
75-34-3	1,1-dichloroethane	4.9		
75-09-2	methylene chloride	5.3	B	@ 6/4 *
156-59-2	cis-1,2-Dichloroethene	5.3		
156-60-5	trans-1,2-dichloroethene	4.8		
67-66-3	chloroform	5.4		
78-93-3	2-butanone	5.0	U	
74-97-5	bromochloromethane	5.1		
71-55-6	1,1,1-trichloroethane	4.9		
56-23-5	carbontetrachloride	5.0		
71-43-2	benzene	5.2		
107-06-2	1,2-dichloroethane	5.1		
79-01-6	trichloroethene	5.1		
78-87-5	1,2-dichloropropane	5.3		
75-27-4	bromodichloromethane	5.5		
10061-01-5	cis-1,3-dichloropropene	4.7		
108-10-1	4-methyl-2-pentanone	5.0	U	
108-88-3	toluene	5.0		
10061-02-6	trans-1,3-dichloropropene	5.2		
79-00-5	1,1,2-trichloroethane	5.1		
127-18-4	tetrachloroethene	4.9		
591-78-6	2-hexanone	5.0	U	
124-48-1	dibromochloromethane	5.1		
106-93-4	1,2-Dibromoethane	5.2		
108-90-7	chlorobenzene	5.1		
100-41-4	ethylbenzene	5.0		

* target hit greaterthan 5x contamin

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VLK01MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: ICV/LCS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4674

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	10.2	
1330-20-7	o-xylene	5.1	
100-42-5	styrene	5.1	
75-25-2	bromoform	4.8	
79-34-5	1,1,2,2-tetrachloroethane	5.3	
541-73-1	1,3-Dichlorobenzene	5.0	
106-46-7	1,4-Dichlorobenzene	5.1	
95-50-1	1,2-Dichlorobenzene	5.1	
96-12-8	1,2-dibromo-3-chloropropane	5.6	
120-82-1	1,2,4-Trichlorobenzene	4.8	
87-68-3	Hexachlorobutadiene	4.9	
87-61-6	1,2,3-Trichlorobenzene	5.2	

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix Spike - EPA Sample No.: VBLK02

COMPOUND	SPIKE ADDED (ug/l)	SAMPLE CONCENTRATION (ug/l)	MS CONCENTRATION (ug/l)	MS % REC #	QC. LIMITS REC.
vinyl chloride	5.0	0.00	5.0	100	60-140
carbontetrachloride	5.0	0.00	4.8	96	60-140
benzene	5.0	0.00	4.8	96	60-140
1,2-dichloroethane	5.0	0.00	4.5	90	60-140
trichloroethene	5.0	0.00	4.9	98	60-140
1,2-dichloropropane	5.0	0.00	4.6	92	60-140
cis-1,3-dichloropropene	5.0	0.00	4.7	94	60-140
1,1,2-trichloroethane	5.0	0.00	4.9	98	60-140
tetrachloroethene	5.0	0.00	4.7	94	60-140
1,2-Dibromoethane	5.0	0.00	4.9	98	60-140
bromoform	5.0	0.00	5.2	104	60-140
1,4-Dichlorobenzene	5.0	0.00	5.0	100	60-140

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

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS: _____

FORM III VOA-1

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02MS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4688

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	4.9	
75-01-4	vinyl chloride	5.0	
74-83-9	bromomethane	3.7	
75-00-3	chloroethane	5.1	
75-69-4	Trichlorofluoromethane	5.0	
75-35-4	1,1-dichloroethene	4.8	
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	4.4	
75-09-2	methylene chloride	4.8	
156-59-2	cis-1,2-Dichloroethene	4.8	
156-60-5	trans-1,2-dichloroethene	4.4	
67-66-3	chloroform	4.7	B
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	4.6	
71-55-6	1,1,1-trichloroethane	4.5	
56-23-5	carbontetrachloride	4.8	
71-43-2	benzene	4.8	
107-06-2	1,2-dichloroethane	4.5	
79-01-6	trichloroethene	4.9	
78-87-5	1,2-dichloropropane	4.6	
75-27-4	bromodichloromethane	5.0	
10061-01-5	cis-1,3-dichloropropene	4.7	
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	4.5	
10061-02-6	trans-1,3-dichloropropene	4.9	
79-00-5	1,1,2-trichloroethane	4.9	
127-18-4	tetrachloroethene	4.7	
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	4.9	
106-93-4	1,2-Dibromoethane	4.9	
108-90-7	chlorobenzene	4.6	
100-41-4	ethylbenzene	4.6	

@ 6/4 L

* Target hit greater than 5x contamin

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02MS

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02MS

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4688

Level: (low/med) LOW Date Received: 05/26/04

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	9.4	
1330-20-7	o-xylene	4.7	
100-42-5	styrene	4.6	
75-25-2	bromoform	5.2	
79-34-5	1,1,2,2-tetrachloroethane	5.1	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	5.0	
95-50-1	1,2-Dichlorobenzene	4.9	
96-12-8	1,2-dibromo-3-chloropropane	5.0	
120-82-1	1,2,4-Trichlorobenzene	4.6	
87-68-3	Hexachlorobutadiene	4.8	
87-61-6	1,2,3-Trichlorobenzene	5.1	

METALS
-5A-
SPIKE SAMPLE RECOVERY

SAMPLE NO.

M27SS

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

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

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Chromium	75 - 125	293.1198		83.0500		200.00	105.0		P

Comments:

METALS
-5B-
POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

M27SA

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added(SA)	%R	Q	M
Chromium		268.25		83.05		200.0	92.6		P

Comments:

METALS

-6-

DUPLICATES

SAMPLE NO.

M27SD

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate:

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

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Chromium		83.0500		74.4149		11.0		P

COLUMBIA ANALYTICAL SERVICES

INORGANIC QUALITY CONTROL SUMMARY

Report Date : 07/06/04
CAS Order # : 730338 - M27S
Client : Shaw Environmental
MRFA
Reported Units: MG/L
Run # : 105189

	PRECISION			ACCURACY			
	ORIGINAL	DUPLICATE	RPD	FOUND	ADDED	% REC.	LIMITS
IEXAVALENT CHROMIUM	0.0100 U	0.0100 U	NC	0.185	0.200	93	70 - 130

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Lab File ID: R4672 Lab Sample ID: VBLK

Date Analyzed: 06/05/04 Time Analyzed: 0136

GC Column: ZB-624-30MID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: MS6

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLK01MS	ICV/LCS	R4674	0250
02	SYSTEM INFLU	730317	R4675	0327
03	DGC-4S	730331	R4676	0404
04	DGC-3S	730332	R4677	0441
05	M33I	730333	R4678	0518
06	M33S	730334	R4679	0555
07	SW D	730335	R4680	0632
08	SW B	730336	R4681	0709
09	SW A	730339	R4682	0746
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
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23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

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

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4672

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	0.46	J
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	1.0	U
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

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

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4672

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK01

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

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

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4672

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/l

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK02

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Lab File ID: R4687 Lab Sample ID: VBLK02

Date Analyzed: 06/05/04 Time Analyzed: 1058

GC Column: ZB-624-30MID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: MS6

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VBLK02MS	VBLK02MS	R4688	1138
02	M27S	730338	R4689	1215
03	DUPLICATE	730341	R4691	1329
04	TRIP BLANK	731049	R4692	1406
05	SYSTEM EFFLU	730463	R4693	1434
06	M27D	730337	R4694	1547
07	M27SMS	730338MS	R4695	1621
08	M27SMSD	730338MSD	R4696	1650
09	COOLER BLANK	730342	R4702	2030
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
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22				
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4687

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	1.0	U
75-01-4	vinyl chloride	1.0	U
74-83-9	bromomethane	1.0	U
75-00-3	chloroethane	1.0	U
75-69-4	Trichlorofluoromethane	1.0	U
75-35-4	1,1-dichloroethene	1.0	U
67-64-1	acetone	5.0	U
75-15-0	carbon disulfide	1.0	U
75-34-3	1,1-dichloroethane	1.0	U
75-09-2	methylene chloride	1.0	U
156-59-2	cis-1,2-Dichloroethene	1.0	U
156-60-5	trans-1,2-dichloroethene	1.0	U
67-66-3	chloroform	0.17	J
78-93-3	2-butanone	5.0	U
74-97-5	bromochloromethane	1.0	U
71-55-6	1,1,1-trichloroethane	1.0	U
56-23-5	carbontetrachloride	1.0	U
71-43-2	benzene	1.0	U
107-06-2	1,2-dichloroethane	1.0	U
79-01-6	trichloroethene	1.0	U
78-87-5	1,2-dichloropropane	1.0	U
75-27-4	bromodichloromethane	1.0	U
10061-01-5	cis-1,3-dichloropropene	1.0	U
108-10-1	4-methyl-2-pentanone	5.0	U
108-88-3	toluene	1.0	U
10061-02-6	trans-1,3-dichloropropene	1.0	U
79-00-5	1,1,2-trichloroethane	1.0	U
127-18-4	tetrachloroethene	1.0	U
591-78-6	2-hexanone	5.0	U
124-48-1	dibromochloromethane	1.0	U
106-93-4	1,2-Dibromoethane	1.0	U
108-90-7	chlorobenzene	1.0	U
100-41-4	ethylbenzene	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK02

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4687

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
1330-20-7	m,p-xylenes	2.0	U
1330-20-7	o-xylene	1.0	U
100-42-5	styrene	1.0	U
75-25-2	bromoform	1.0	U
79-34-5	1,1,2,2-tetrachloroethane	1.0	U
541-73-1	1,3-Dichlorobenzene	1.0	U
106-46-7	1,4-Dichlorobenzene	1.0	U
95-50-1	1,2-Dichlorobenzene	1.0	U
96-12-8	1,2-dibromo-3-chloropropane	1.0	U
120-82-1	1,2,4-Trichlorobenzene	1.0	U
87-68-3	Hexachlorobutadiene	1.0	U
87-61-6	1,2,3-Trichlorobenzene	1.0	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK02

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Sample wt/vol: 25.00 (g/ml) ML Lab File ID: R4687

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

% Moisture: not dec. _____ Date Analyzed: 06/05/04

GC Column: ZB-624-30M ID: 0.25 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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25.					
26.					
27.					
28.					
29.					
30.					

METALS

-3-

BLANKS

Contract: R2421508

Lab Code: Case No.: SAS No.: SDG NO.: DGC-4A

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Chromium	0.4	U	0.5	B	0.4	U	0.4	U	0.357	U	P

COLUMBIA ANALYTICAL SERVICES

INORGANIC BLANK SPIKE SUMMARY

CAS Submission #: R2421508
Client: Shaw Environmental
MRFA

BLANK SPIKES

	BLANK	FOUND	ADDED	% REC	LIMITS	RUN	UNITS
HEXAVALENT CHROMIUM	0.0100 U	0.185	0.200	93	80 - 120	105189	MG/L

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Lab File ID: R4663 BFB Injection Date: 06/04/04

Instrument ID: MS6 BFB Injection Time: 2001

GC Column: ZB-624-30M ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	18.3
75	30.0 - 66.0% of mass 95	44.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.7 (0.7)1
174	50.0 - 120.0% of mass 95	113.6
175	4.0 - 9.0% of mass 174	8.9 (7.9)1
176	93.0 - 101.0% of mass 174	108.7 (95.6)1
177	5.0 - 9.0% of mass 176	6.7 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001/005	VSTD001/005	R4665	06/04/04	2118
02	VSTD002/010	VSTD002/010	R4666	06/04/04	2155
03	VSTD005/025	VSTD005/025	R4667	06/04/04	2232
04	VSTD010/050	VSTD010/050	R4668	06/04/04	2309
05	VSTD025/125	VSTD025/125	R4669	06/04/04	2346
06	VBLK01	VBLK	R4672	06/05/04	0136
07	VLK01MS	ICV/LCS	R4674	06/05/04	0250
08	SYSTEM INFLU	730317	R4675	06/05/04	0327
09	DGC-4S	730331	R4676	06/05/04	0404
10	DGC-3S	730332	R4677	06/05/04	0441
11	M33I	730333	R4678	06/05/04	0518
12	M33S	730334	R4679	06/05/04	0555
13	SW D	730335	R4680	06/05/04	0632
14	SW B	730336	R4681	06/05/04	0709
15	SW A	730339	R4682	06/05/04	0746
16					
17					
18					
19					
20					
21					
22					

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Lab File ID: R4685 BFB Injection Date: 06/05/04

Instrument ID: MS6 BFB Injection Time: 0941

GC Column: ZB-624-30M ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	13.1
75	30.0 - 66.0% of mass 95	37.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.9 (0.8)1
174	50.0 - 120.0% of mass 95	118.4
175	4.0 - 9.0% of mass 174	8.4 (7.1)1
176	93.0 - 101.0% of mass 174	115.0 (97.2)1
177	5.0 - 9.0% of mass 176	6.2 (5.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005/025	VSTD005/025	R4686	06/05/04	1019
02	VBLK02	VBLK02	R4687	06/05/04	1058
03	VBLK02MS	VBLK02MS	R4688	06/05/04	1138
04	M27S	730338	R4689	06/05/04	1215
05	DUPLICATE	730341	R4691	06/05/04	1329
06	TRIP BLANK	731049	R4692	06/05/04	1406
07	SYSTEM EFFLU	730463	R4693	06/05/04	1434
08	M27D	730337	R4694	06/05/04	1547
09	M27SMS	730338MS	R4695	06/05/04	1621
10	M27SMSD	730338MSD	R4696	06/05/04	1650
11	COOLER BLANK	730342	R4702	06/05/04	2030
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Lab File ID (Standard): R4669 Date Analyzed: 06/04/04

Instrument ID: MS6 Time Analyzed: 2346

GC Column: ZB-624-30M ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 (DCB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DFB) AREA #	RT #
	12 HOUR STD	253549	12.74	513949	11.21	625743	8.94
	UPPER LIMIT	507098	13.24	1027898	11.71	1251486	9.44
	LOWER LIMIT	126775	12.24	256975	10.71	312872	8.44
	EPA SAMPLE NO.						
01	VBLK01	156406	12.74	440083	11.21	546887	8.94
02	VLK01MS	231034	12.73	473139	11.21	601355	8.94
03	SYSTEM INFLU	161439	12.74	463474	11.21	573636	8.94
04	DGC-4S	160312	12.74	456418	11.21	540702	8.94
05	DGC-3S	159098	12.74	444126	11.21	542661	8.94
06	M33I	167021	12.74	436802	11.21	526434	8.94
07	M33S	157174	12.74	437322	11.21	521512	8.94
08	SW D	149639	12.74	433311	11.21	513736	8.94
09	SW B	148532	12.74	420494	11.21	507046	8.94
10	SW A	142988	12.74	429732	11.21	510464	8.94
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (CBZ) = chlorobenzene-d5
IS3 (DFB) = 1,4-Difluorobenzene

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 used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: SHAW

Lab Code: 10145 Case No.: R24-21508 SAS No.: SDG No.: DGC-4S

Lab File ID (Standard): R4686 Date Analyzed: 06/05/04

Instrument ID: MS6 Time Analyzed: 1019

GC Column: ZB-624-30M ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 (DCB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DFB) AREA #	RT #
	12 HOUR STD	228298	12.74	465961	11.21	582944	8.94
	UPPER LIMIT	456596	13.24	931922	11.71	1165888	9.44
	LOWER LIMIT	114149	12.24	232981	10.71	291472	8.44
	EPA SAMPLE NO.						
01	VBLK02	197565	12.74	525441	11.21	655503	8.94
02	VBLK02MS	227451	12.74	467702	11.21	600348	8.94
03	M27S	191750	12.74	528732	11.21	639098	8.94
04	DUPLICATE	206757	12.74	501107	11.21	604298	8.94
05	TRIP BLANK	197301	12.74	495277	11.21	585777	8.94
06	SYSTEM EFFLU	182055	12.74	501098	11.21	584824	8.94
07	M27D	180769	12.74	450957	11.21	582372	8.94
08	M27SMS	260437	12.74	551656	11.21	701100	8.94
09	M27SMSD	249945	12.74	559348	11.21	718092	8.94
10	COOLER BLANK	169096	12.74	475578	11.21	566717	8.94
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (CBZ) = chlorobenzene-d5
IS3 (DFB) = 1,4-Difluorobenzene

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 used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

APPENDIX C

LABORATORY DATA, PERCHLORATE RESULTS PACKAGE,

AMMONIUM PERCHLORATE INFLUENT WATER SAMPLE

May 25, 2004

1317 South 13th Avenue P.O. Box 479 Kelso, Washington 98626 (360) 577-7222 ph (360) 636-1068 fax

Columbia Analytical Services, Inc.
An Employee - Owned Company

June 15, 2004

Service Request No: K2403905

Janice Jaeger
Columbia Analytical Services, Inc.
1 Mustard Street, Suite 250
Rochester, NY 14609

RE: MFRA / R2421508 JMod

Dear Janice:

Enclosed are the results of the sample(s) submitted to our laboratory on May 26, 2004. For your reference, these analyses have been assigned our service request number K2403905.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3358.

Respectfully submitted,

Columbia Analytical Services, Inc.

Lynda Huckestein
Client Services Manager

LH/jeb

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
B	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL has been elevated due to a matrix interference.
X	See case narrative.
*	The duplicate analysis not within control limits. See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
U	The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
i	The MRL/MDL has been elevated due to a chromatographic interference.
X	See case narrative.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Shaw Environmental and Infrastructure	**Service Request No.:**	K2403905
Project:	MFRA	**Date Received:**	5/26/2004
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample was received for analysis at Columbia Analytical Services on 5/26/2004. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Approved by _____ **Date** 6/15/04

Chain of Custody Documentation

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services INC.
An Employee - Owned Company
www.caslab.com

One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (585) 288-5380 • 800-695-7222 x11 • FAX (585) 288-8475 PAGE 1 OF 1

SR # K1403905
CAS Contact

20000

Project Name: MRFA	Project Number:
Project Manager: Janice Jaeger	Report CC:
Company/Address: CAS Rochester 1 Mustard st suite 250 Rochester NY 14609	
Phone #: (585) 288-5380	FAX#: (585)
Sampler's Signature:	Sampler's Printed Name:

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 8

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	X Perchlorate	REMARKS/ ALTERNATE DESCRIPTION
System Influent	730317	525-04	8:55	water	1								X	

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other Ice to 4°C

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
____ RUSH (SURCHARGES APPLY)
____ 24 hr ____ 48 hr ____ 5 day
X STANDARD
REQUESTED FAX DATE
REQUESTED REPORT DATE

REPORT REQUIREMENTS
____ I. Results Only
X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
____ V. Speicalized Forms / Custom Report
Edata ____ Yes ____ No

INVOICE INFORMATION
PO#
BILL TO:
SUBMISSION #: R2-21506

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature: Tracy Black	Signature:	Signature:	Signature:	Signature:
Printed Name: Gregory O. Esmerian	Printed Name: Black CAS	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: CAS	Firm: 5/27/04 1400	Firm:	Firm:	Firm:	Firm:
Date/Time: 5-26-04 17:00	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-1102-08

Lynden

Columbia Analytical Services Inc.
Cooler Receipt and Preservation Form

Project/Client Cas - Rochester Work Order K240 3905

Cooler received on 5/26/04 and opened on 5/27/04 by TBlack

1.	Were custody seals on outside of coolers?	(Y)	N
	If yes, how many and where? front		
2.	Were seals intact and signature & date correct?	(Y)	N
3.	Is the shipper's airbill available and filed? If no, record airbill number: 1Z 17W438014682 4377	Y	(N)
4.	COC#		
	Temperature of cooler(s) upon receipt: 5.1		
	Temperature Blank: n/a		
5.	Were custody papers properly filled out (ink, signed, etc.)?	(Y)	N
6.	Type of packing material present bags of ice		
7.	Did all bottles arrive in good condition (unbroken)?	(Y)	N
8.	Were all bottle labels complete (i.e analysis, preservation, etc.)?	(Y)	N
9.	Did all bottle labels and tags agree with custody papers?	(Y)	N
10.	Were the correct types of bottles used for the tests indicated?	(Y)	N
11.	Were all of the preserved bottles received at the lab with the appropriate pH?	~~Y~~	~~N~~
12.	Were VOA vials checked for absence of air bubbles, and if present, noted below?	~~Y~~	N
13.	Did the bottles originate from CAS/K or a branch laboratory?	(Y)	N
14.	Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?	~~Y~~	~~N~~
15.	Was C12/Res negative?	~~Y~~	~~N~~

Explain any discrepancies: _____

RESOLUTION: _____

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : Shaw Environmental and Infrastructure
Project Name : NA
Project Number : MFRA
Sample Matrix : WATER

Service Request : K2403905
Date Collected : 05/25/04
Date Received : 05/26/04

Perchlorate

Units : ug/L (ppb)
Basis : NA

Analysis Method : 314.0
Test Notes :

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
System Influent	K2403905-001	2.0	0.5	1	06/09/04	ND	
Method Blank	K2403905-MB	2.0	0.5	1	06/09/04	ND	

Report By:BReller

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Shaw Environmental and Infrastructure
Project Name : NA
Project Number : MFRA
Sample Matrix : WATER

Service Request : K2403905
Date Collected : NA
Date Received : NA
Date Extracted : NA
Date Analyzed : 06/09/04

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K2403954-001DUP
Test Notes :

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Perchlorate	314.0	2.0	18.4	19.6	19.0	6	

Report By:BReller

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Shaw Environmental and Infrastructure
Project Name : NA
Project Number : MFRA
Sample Matrix : WATER

Service Request : K2403905
Date Collected : NA
Date Received : NA
Date Extracted : NA
Date Analyzed : 06/09/04

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K2403954-001MS
Test Notes :

Units : ug/L (ppb)
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Perchlorate	314.0	2.0	40.0	18.4	65.6	118	75-125	

Report By:BReller

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	Shaw Environmental and Infrastructure	**Service Request :**	K2403905
Project Name :	NA	**Date Collected :**	NA
Project Number :	MFRA	**Date Received :**	NA
Sample Matrix :	WATER	**Date Extracted :**	NA
		Date Analyzed :	06/09/04

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	ug/L (ppb)
Lab Code :	K2403905-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Perchlorate	None	314.0	500	517	103	85-115	

Report By:BReller

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Shaw Environmental and Infrastructure
Project : NA

Service Request : K2403905
Date Collected : NA
Date Received : NA

Perchlorate
EPA Method 314.0
Units: ug/L (ppb)

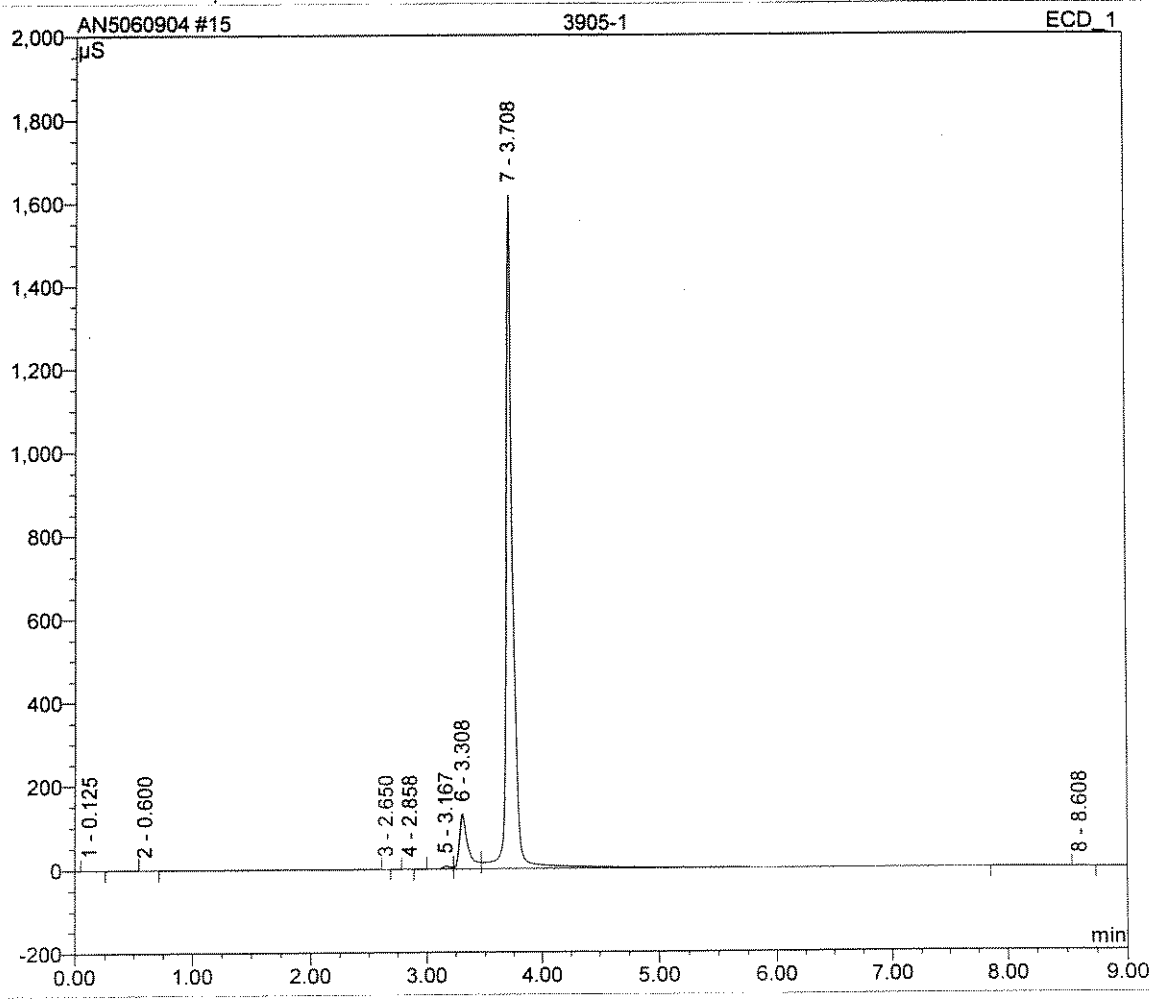
CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	06/09/04	25.0	24.9	100
CCV2 Result	06/09/04	100	107	107

Sample Name:	**3905-1**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 11:28**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
		TOTAL:		0.00	0.00	0.00

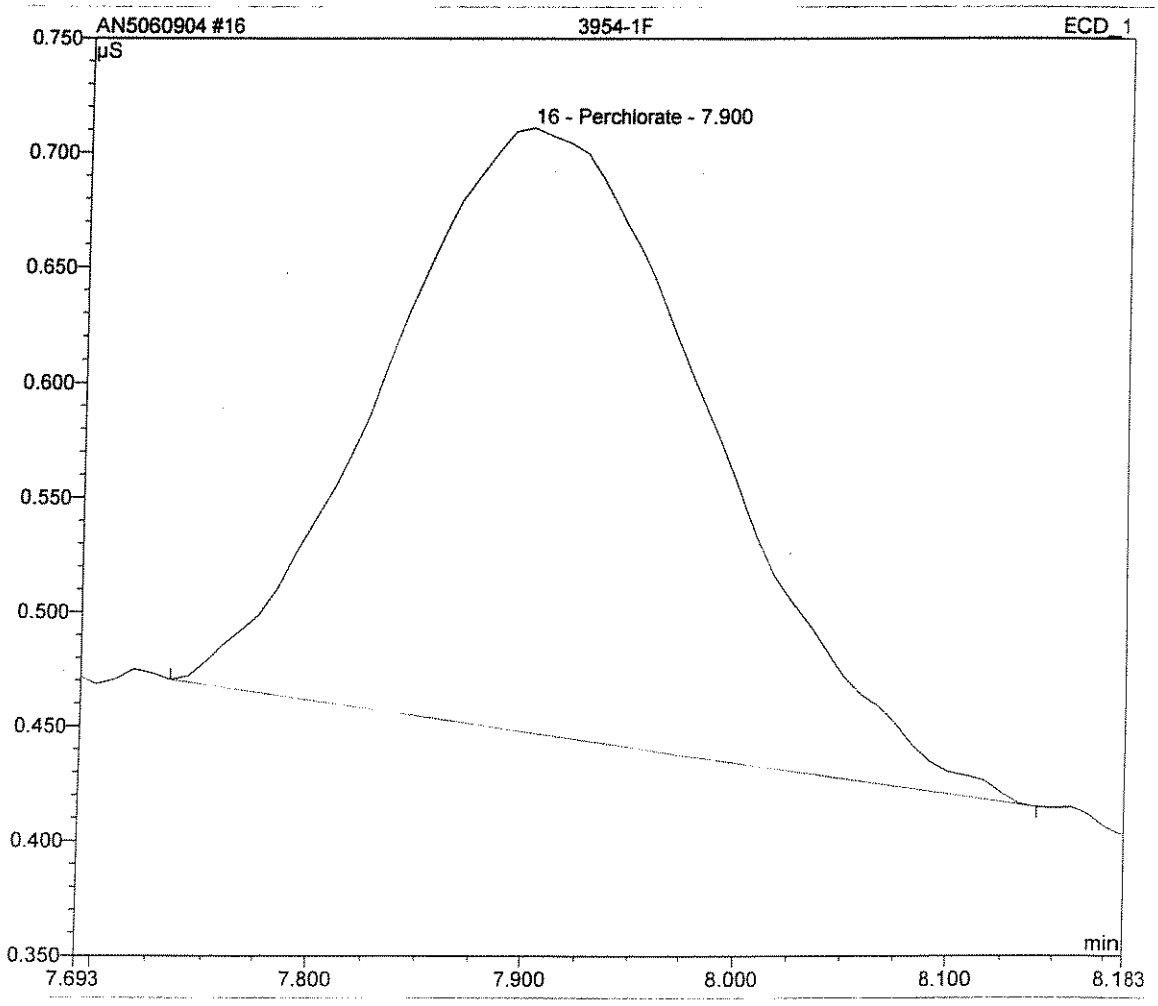
perchlorate <2.0



6HG 9/9/04

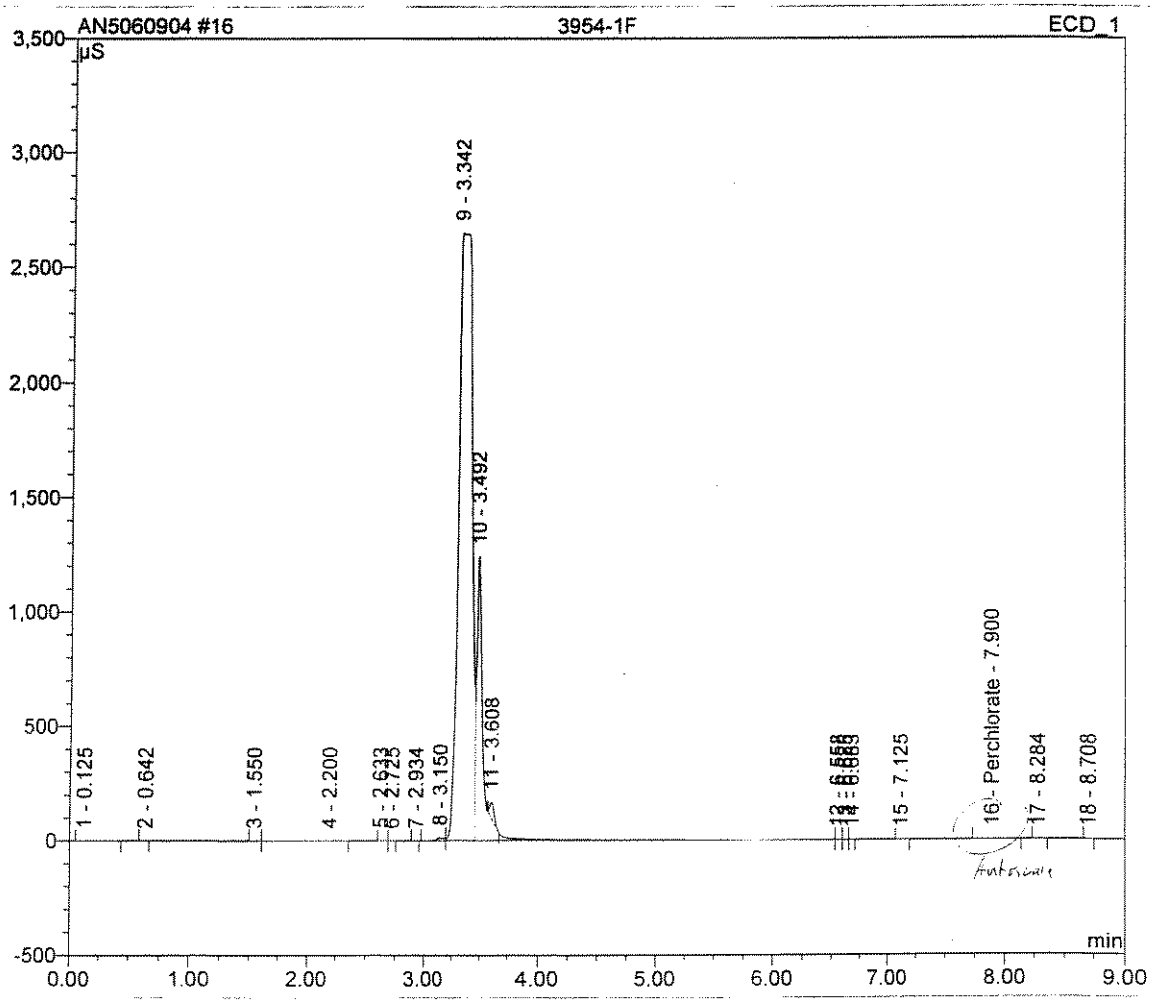
Sample Name:	**3954-1F**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 11:40**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
16	7.90	Perchlorate	BMB	0.047	0.263	18.4115
		TOTAL:		0.05	0.26	18.41



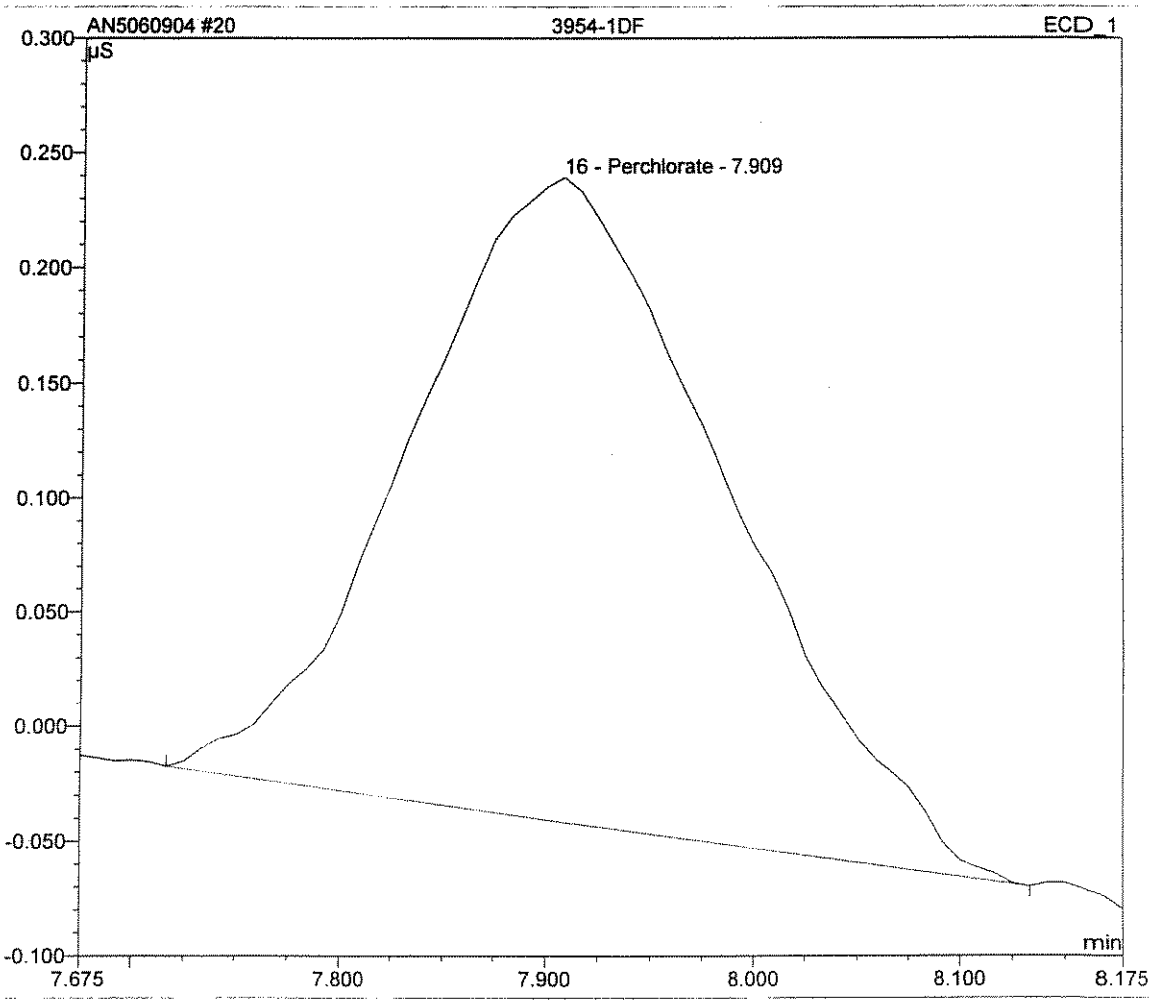
Sample Name:	**3954-1F**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 11:40**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
16	7.90	Perchlorate	BMB	0.047	0.263	18.4115
		TOTAL:		0.05	0.26	18.41



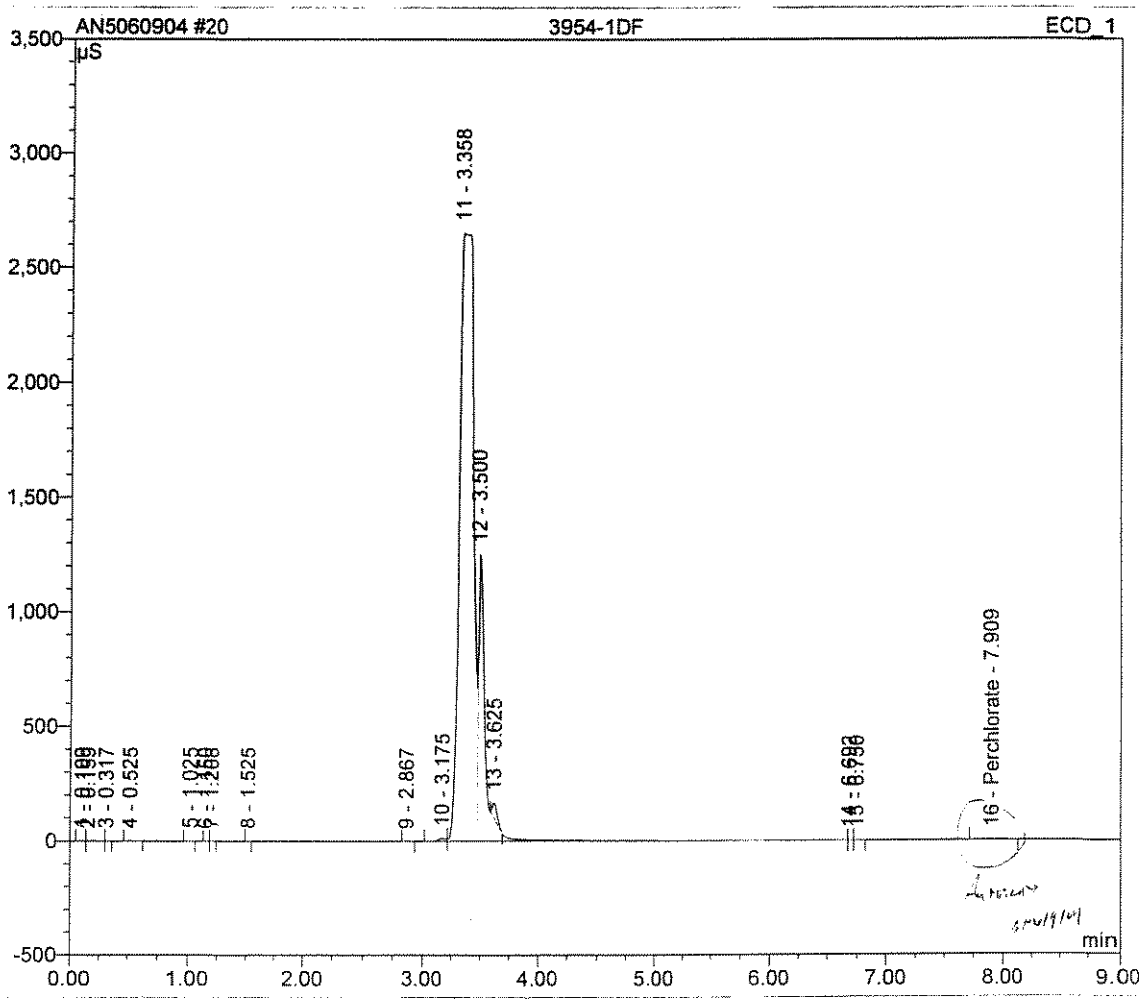
Sample Name:	**3954-1DF**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 12:25**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
16	7.91	Perchlorate	BMB	0.050	0.281	19.6225
		TOTAL:		0.05	0.28	19.62



Sample Name:	**3954-1DF**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 12:25**	*Run Time:*	**9.00**

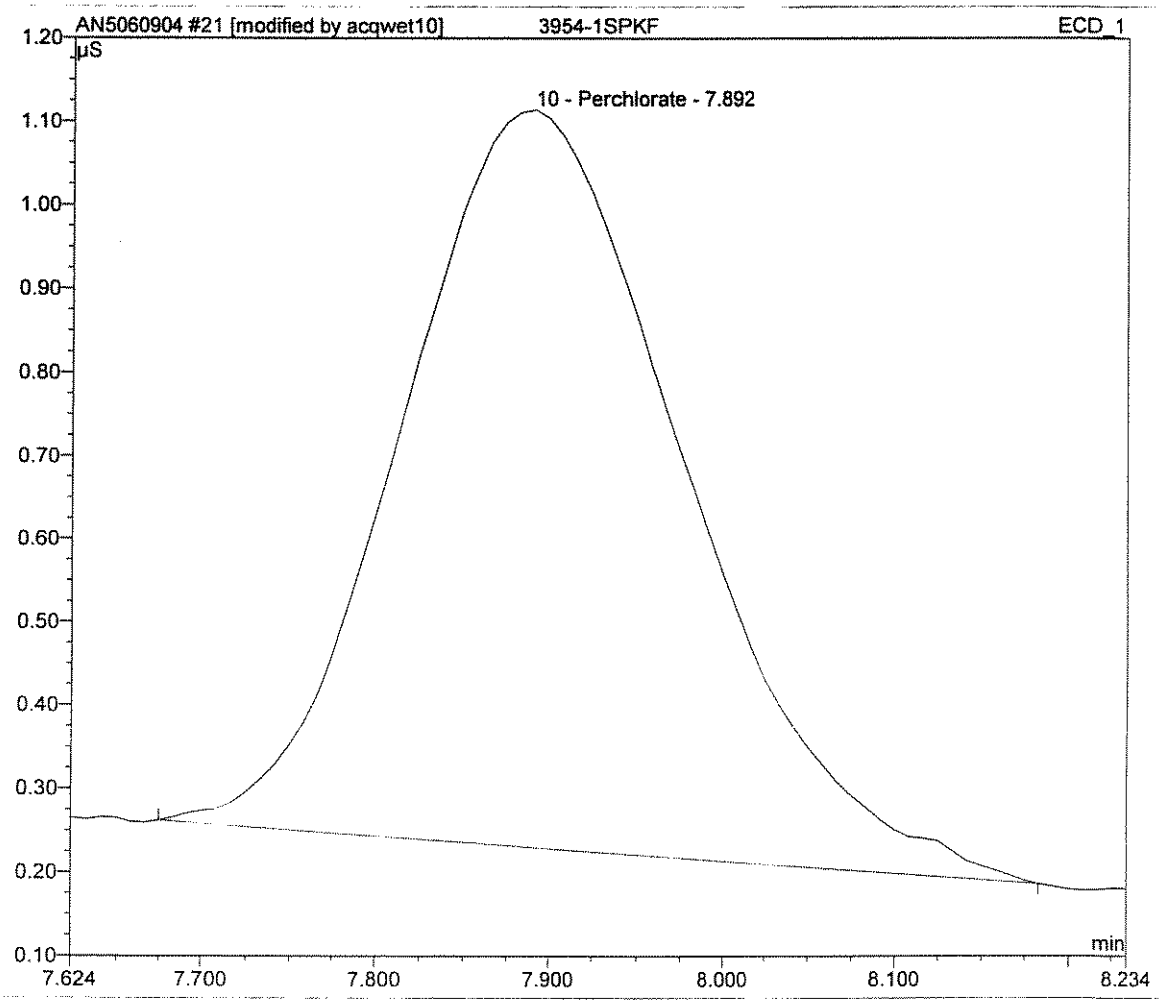
No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
16	7.91	Perchlorate	BMB	0.050	0.281	19.6225
		TOTAL:		0.05	0.28	19.62



Sample Name:	**3954-1SPKF**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 12:37**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
10	7.89	Perchlorate	BMB*	0.167	0.885	65.6395
		TOTAL:		0.17	0.88	65.64

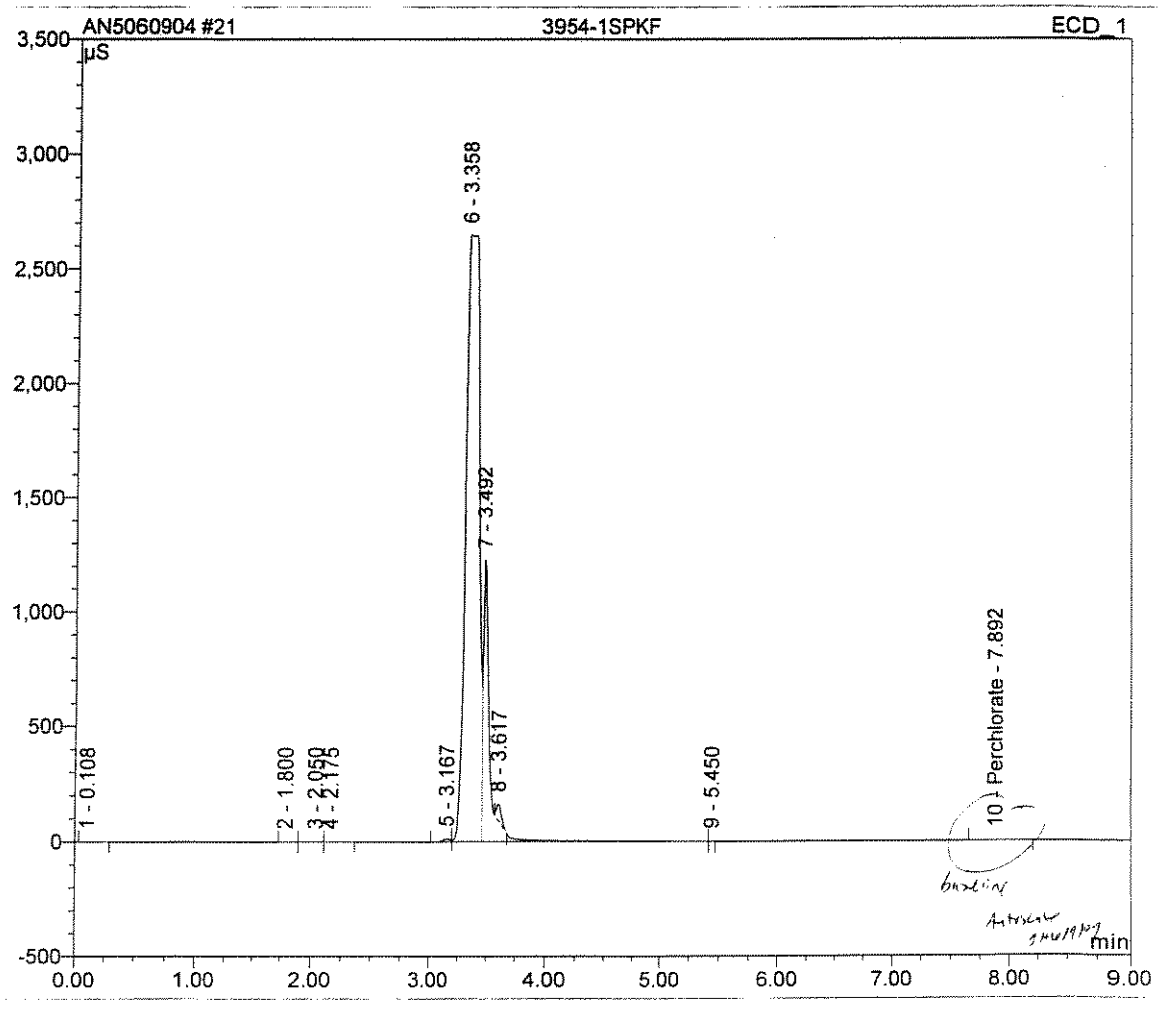
Rec = 118



spk · 46

Sample Name:	**3954-1SPKF**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 12:37**	*Run Time:*	**9.00**

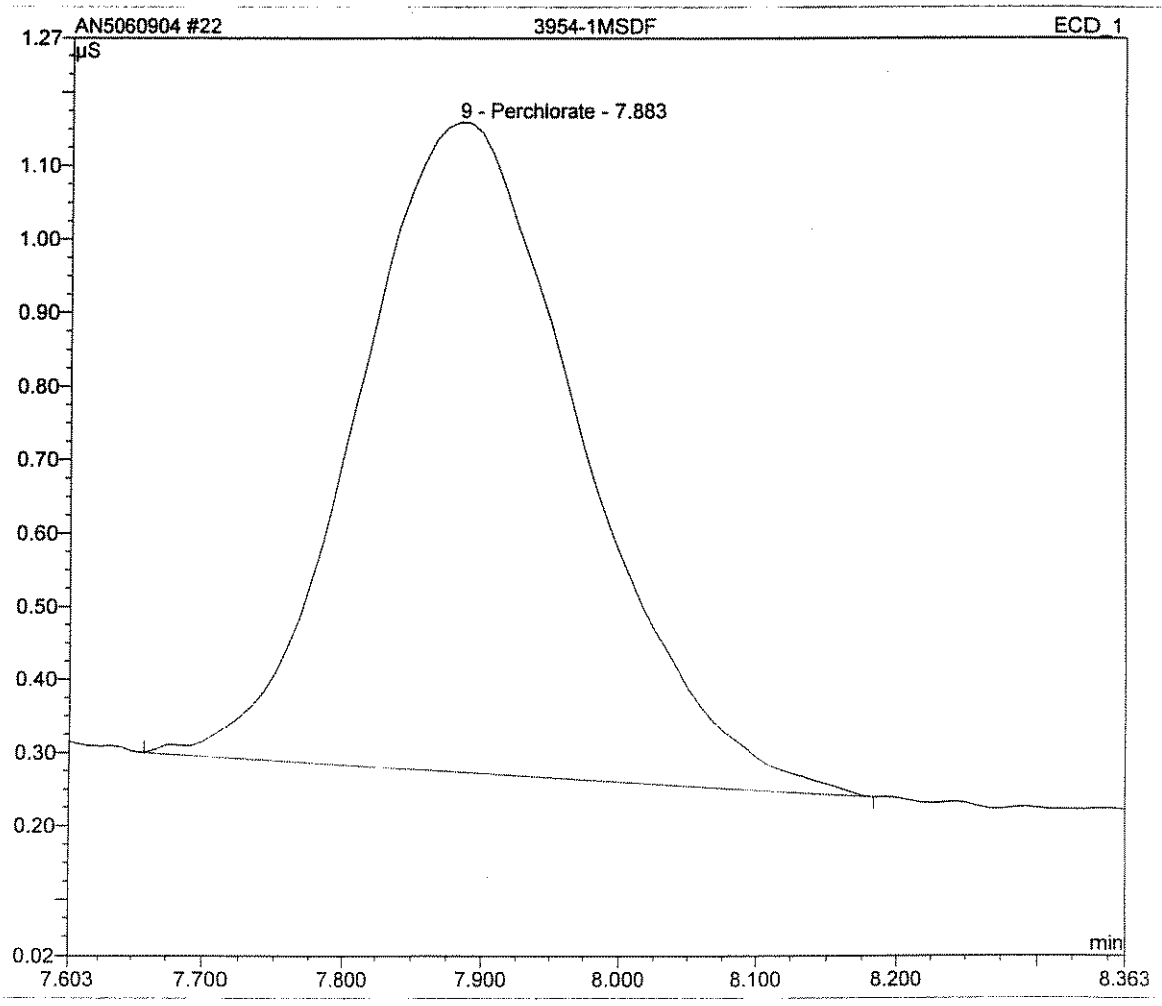
No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
10	7.89	Perchlorate	BMB	0.169	0.889	66.4851
		TOTAL:		0.17	0.89	66.49



Sample Name:	**3954-1MSDF**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 12:48**	*Run Time:*	**9.00**

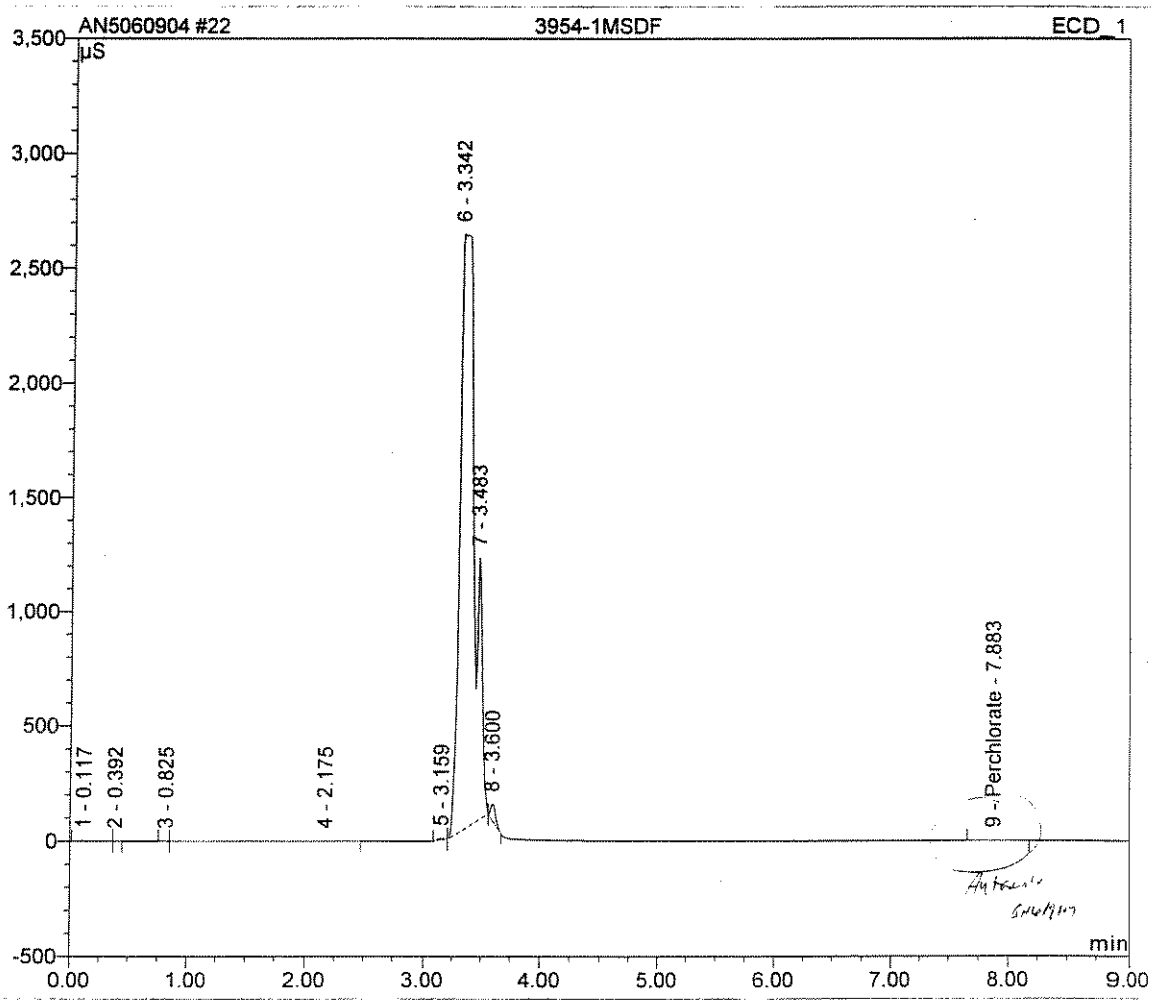
No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
9	7.88	Perchlorate	BMB	0.167	0.886	65.6472
		TOTAL:		0.17	0.89	65.65

Rec=118



Sample Name:	**3954-1MSDF**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 12:48**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
9	7.88	Perchlorate	BMB	0.167	0.886	65.6472
		TOTAL:		0.17	0.89	65.65



Ion Chromatography Data Quality Report
Perchlorate
Inorganics

1. Holding times met for all samples analyzed? (yes/no/NA)
2. Are all chromatograms signed and dated? (yes/no/NA)
3. Are dilutions within upper limits of the curve? (yes/no/NA)
4. Are analysis/extraction stickers included on report? (yes/no/NA)
5. Are detection limits reported correctly? (yes/no/NA)
6. Are all quality control criteria met? (yes/no/NA)
   a. Method Blanks, CCV's, CCB's, LCS's, Dups, and Spikes analyzed at the proper frequency? (yes/no/NA)
   b. Are CCV's and CCB's all within acceptance limits? (yes/no/NA)
   c. Are results for Method Blanks all ND? (yes/no/NA)
   d. Are all QC samples within acceptance criteria? (LCS% rec, MS% rec, Duplicate RPD's, etc.) (yes/no/NA)
   e. Are all exceptions explained? (yes/no/NA)
8. Are all samples labelled correctly? (yes/no/NA)

CAS Standard Identification Codes and Abbreviated Footnotes for Chromatograms

G1 Sample was analyzed past the end of recommended holding time. See Nonconformity sheet.
G2 Sample was reanalyzed past holding time. Initial analysis was performed within recommended holding time.
G4 Sample was received past the end of recommended holding time.
R1 High RPD is because the duplicate sample results are less than three times the method reporting limit.
D MRL is elevated because of matrix interferences and the sample required diluting.
F Sample filtered primary to analysis. 6/14/04

IPC
Perchlorate True Value = 25 ppb CAS ID# = AN3-71-R Expires 6/15/04 I 5': 7.47 - 8.25

ICCS
Perchlorate True Value = ~~5.0 ppb~~ 2.0 ppb (6) CAS ID# = AN3-71-N Expires 6/15/04

CCV
Perchlorate True Value = 25.0 ppb CAS ID # = AN3-71-O Expires 6/15/04

Spike
Perchlorate True Value = 1000 ppb CAS ID# = AN3-71-Q Expires 6/15/04

ECCV
Perchlorate True Value = 100 ppb CAS ID# = AN3-71-P Expires 6/15/04

LCS True Value = 500 ppb CAS ID#: K-IC040645 Expires: 12/9/04
40.0 ppb X dilution factor

Analyst: B. Hetland Date: 6/9/04

First Review: B Hetland Date: 6/9/04

Final Review: [signature] Date: 6/10/04

Sequence: AN5060904
Operator: acqwet10
Printed: 6/9/2004 1:23:22 PM

Title:
Datasource: ACQWET10_local
Location:
Timebase: ICS2500
#Samples: 24
Created: 6/8/2004 11:14:58 AM by acqwet10
Last Update: 6/9/2004 12:05:11 PM by acqwet10

No.	Name	Type	Pos.	Inj. Vol.	Program	Method	Status
1	STD1/LVL1	Standard	1	1000.0	PERCHLORATE	PERCHLORATE	Finished
2	STD1/LVL1	Standard	2	1000.0	PERCHLORATE	PERCHLORATE	Finished
3	STD2/LVL2	Standard	3	1000.0	PERCHLORATE	PERCHLORATE	Finished
4	STD3/LVL3	Standard	4	1000.0	PERCHLORATE	PERCHLORATE	Finished
5	STD4/LVL4	Standard	5	1000.0	PERCHLORATE	PERCHLORATE	Finished
6	STD5/LVL5	Standard	6	1000.0	PERCHLORATE	PERCHLORATE	Finished
7	STD6/LVL6	Standard	7	1000.0	PERCHLORATE	PERCHLORATE	Finished
8	STD7/LVL7	Standard	8	1000.0	PERCHLORATE	PERCHLORATE	Finished
9	STD8/LVL8	Standard	9	1000.0	PERCHLORATE	PERCHLORATE	Finished
10	IPC	Unknown	10	1000.0	PERCHLORATE	PERCHLORATE	Finished
11	MB	Unknown	11	1000.0	PERCHLORATE	PERCHLORATE	Finished
12	ICCS	Unknown	12	1000.0	PERCHLORATE	PERCHLORATE	Finished
13	R-ION06145 LCS	Unknown	13	1000.0	PERCHLORATE	PERCHLORATE	Finished
14	LFB/CCV1	Unknown	14	1000.0	PERCHLORATE	PERCHLORATE	Finished
15	3905-1	Unknown	15	1000.0	PERCHLORATE	PERCHLORATE	Finished
16	3954-1F	Unknown	16	1000.0	PERCHLORATE	PERCHLORATE	Finished
17	3954-2F	Unknown	17	1000.0	PERCHLORATE	PERCHLORATE	Finished
18	3954-3F	Unknown	18	1000.0	PERCHLORATE	PERCHLORATE	Finished
19	3954-4F	Unknown	19	1000.0	PERCHLORATE	PERCHLORATE	Finished
20	3954-1DF	Unknown	20	1000.0	PERCHLORATE	PERCHLORATE	Finished
21	3954-1SPKF	Unknown	21	1000.0	PERCHLORATE	PERCHLORATE	Finished
22	3954-1MSDF	Unknown	22	1000.0	PERCHLORATE	PERCHLORATE	Finished
23	RB	Unknown	23	1000.0	PERCHLORATE	PERCHLORATE	Finished
24	ECCV	Unknown	24	1000.0	PERCHLORATE	PERCHLORATE	Finished

Sequence: AN5060904
Operator: acqwet10
Printed: 6/9/2004 1:23:23 PM

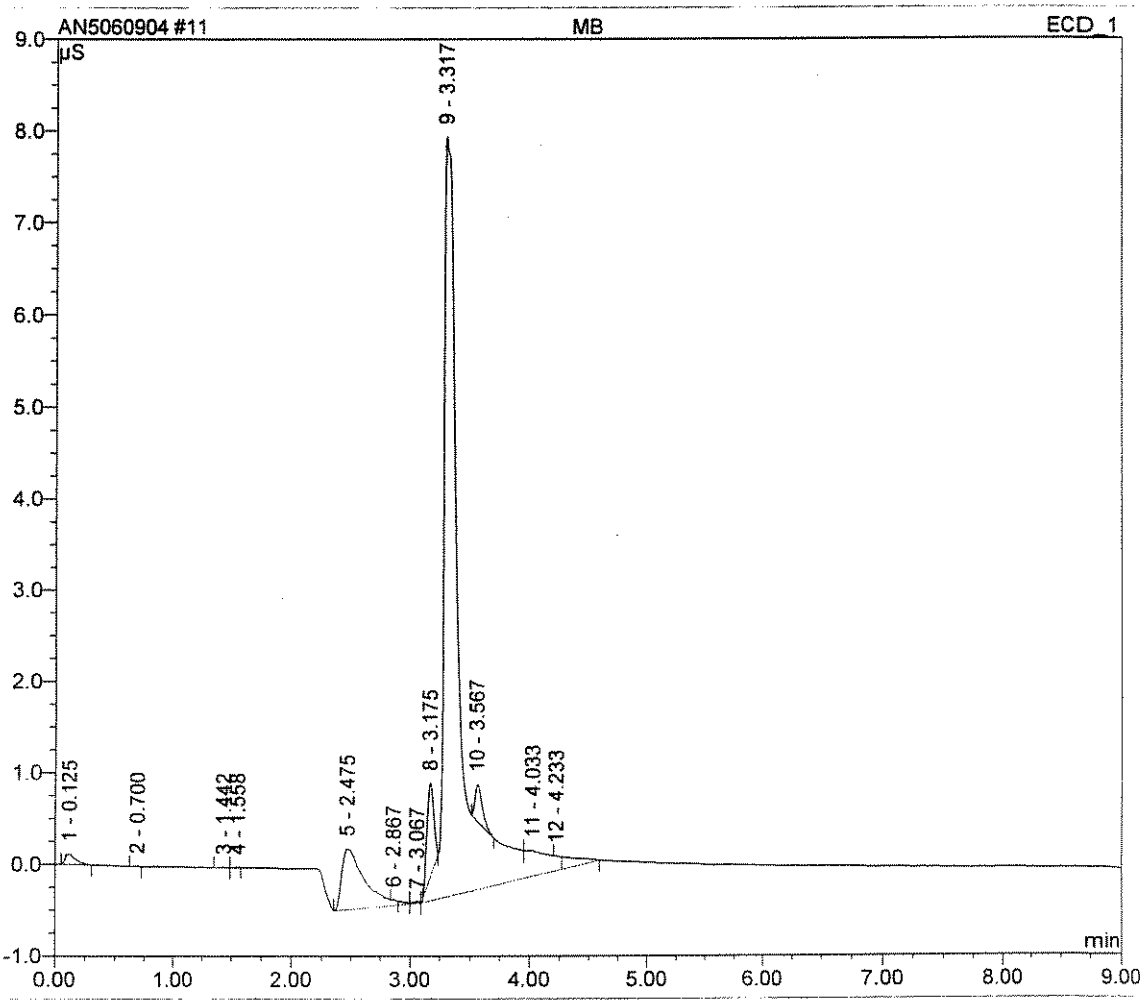
Title:
Datasource: ACQWET10_local
Location:
Timebase: ICS2500
#Samples: 24

Created: 6/8/2004 11:14:58 AM by acqwet10
Last Update: 6/9/2004 12:05:11 PM by acqwet10

No.	Name	Inj. Date/Time	Weight	Dil. Factor	ISTD Amount	Sample ID	Replicate ID	Comment
1	STD1/LVL1	5/5/2004 9:26:21 AM	1.0000	1.0000	1.0000		01	
2	STD1/LVL1	5/5/2004 9:38:17 AM	1.0000	1.0000	1.0000		02	
3	STD2/LVL2	5/5/2004 9:50:12 AM	1.0000	1.0000	1.0000		03	
4	STD3/LVL3	5/5/2004 10:02:08 AM	1.0000	1.0000	1.0000		04	
5	STD4/LVL4	5/5/2004 10:13:33 AM	1.0000	1.0000	1.0000		05	
6	STD5/LVL5	5/5/2004 10:24:59 AM	1.0000	1.0000	1.0000		06	
7	STD6/LVL6	5/5/2004 10:36:24 AM	1.0000	1.0000	1.0000		07	
8	STD7/LVL7	5/5/2004 10:47:49 AM	1.0000	1.0000	1.0000		08	
9	STD8/LVL8	5/5/2004 10:59:14 AM	1.0000	1.0000	1.0000		09	
10	IPC	6/9/2004 10:31:30 AM	1.0000	1.0000	1.0000		09	
11	MB	6/9/2004 10:42:55 AM	1.0000	1.0000	1.0000		09	
12	ICCS	6/9/2004 10:54:21 AM	1.0000	1.0000	1.0000		09	
13	R-ION06145 LCS	6/9/2004 11:05:46 AM	1.0000	10.0000	1.0000		09	
14	LFB/CCV1	6/9/2004 11:17:11 AM	1.0000	1.0000	1.0000		09	
15	3905-1	6/9/2004 11:28:37 AM	1.0000	1.0000	1.0000		09	
16	3954-1F	6/9/2004 11:40:02 AM	1.0000	1.0000	1.0000		09	
17	3954-2F	6/9/2004 11:51:28 AM	1.0000	1.0000	1.0000		09	
18	3954-3F	6/9/2004 12:02:53 PM	1.0000	1.0000	1.0000		09	
19	3954-4F	6/9/2004 12:14:19 PM	1.0000	1.0000	1.0000		09	
20	3954-1DF	6/9/2004 12:25:44 PM	1.0000	1.0000	1.0000		09	
21	3954-1SPKF	6/9/2004 12:37:09 PM	1.0000	1.0000	1.0000		09	
22	3954-1MSDF	6/9/2004 12:48:34 PM	1.0000	1.0000	1.0000		09	
23	RB	6/9/2004 1:00:00 PM	1.0000	1.0000	1.0000		09	
24	ECCV	6/9/2004 1:11:25 PM	1.0000	1.0000	1.0000		09	

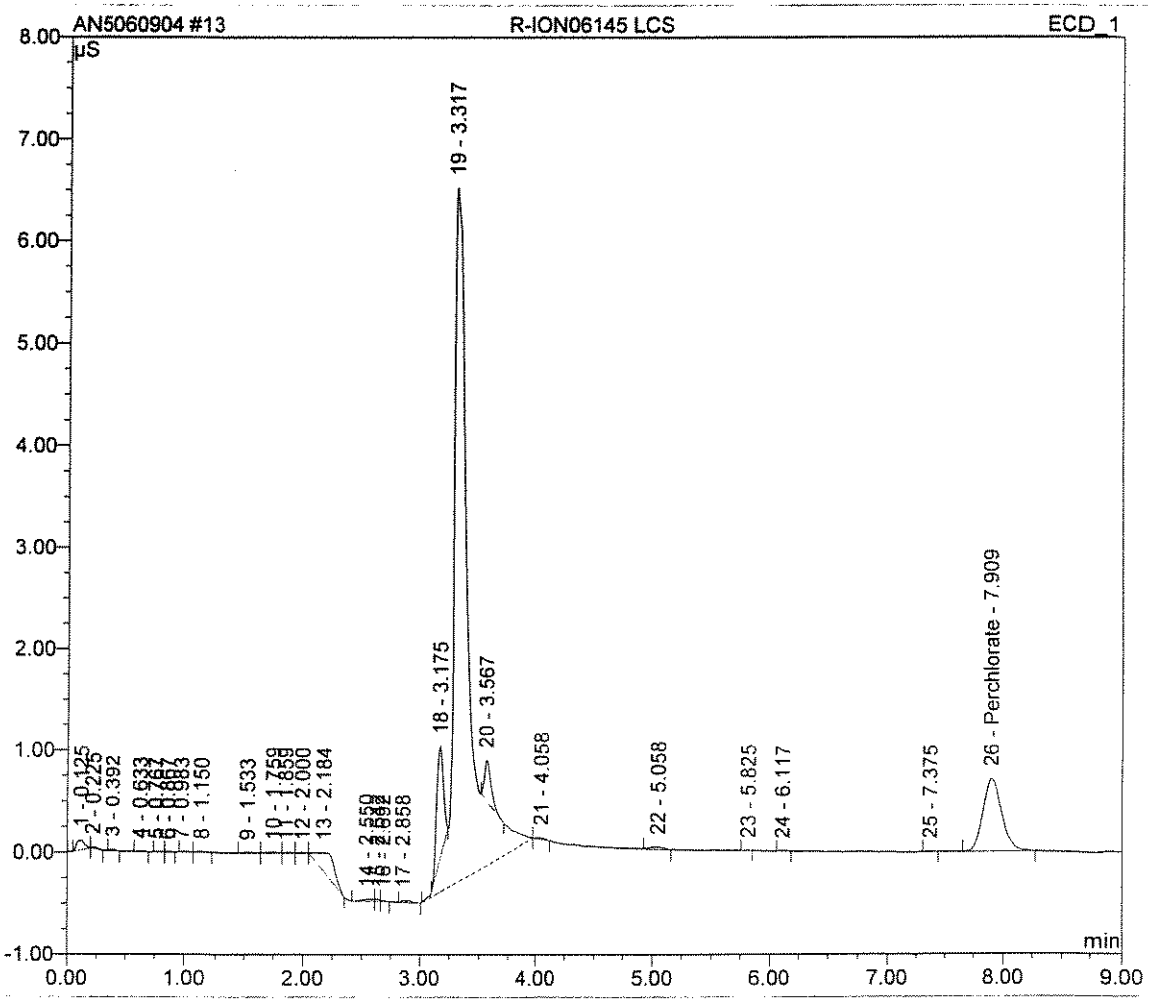
Sample Name:	**MB**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 10:42**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
		TOTAL:		0.00	0.00	0.00



Sample Name:	**R-ION06145 LCS**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**10.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 11:05**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
26	7.91	Perchlorate	BMB	0.131	0.708	517.2045
		TOTAL:		0.13	0.71	517.20



Service Request #: 3885 3913 3909 3905 3954

Method: EPA 120.1

Analysis For: Conductivity (specific conductance, µmhos/cm at 25°C)

Matrix: Water

Standardization: Low Range 1.413 µmhos/cm
High Range 50.000 µmhos/cm

Cell Constant = True Value / Meter Value = 1413/1410 = 1.00

Sample Name	MB	1413	LCS	3885-1	3885-1D	3885-2	3885-3	3885-4	3913-1	3909-1
u/m Range	u	~~u~~ m	m	u	u	u	m	m	u	u
Reading	0.17	1.407	1.234	615.4	614.7	614.8	1.312	5.478	116.2	81.92
Conductivity	<2	1410	1230	615	615	615	1310	5480	116	81.9

Sample Name	3909-1D	MB	1413	3905-1	3954-1	3954-1d	3954-2	3954-3	3954-4	1413
u/m Range	u	u	u	u	u	u	u	m	m	m
Reading	81.78	0.21	1.408	284.5	212.5	214.3	138.4	81.05	1181	1.403
Conductivity	81.8	<2	1410	285	~~217 528~~	214	138	81.0	1180	1400

Sample Name	MB									
u/m Range	u									
Reading	0.4729									
Conductivity	<2									

Sample Name										
u/m Range										
Reading										
Conductivity										

LCS = APG 4053 Lot #: 32962-3 ID #: Cond/1-5-D T.V. = 1300 % REC = 95 (6 M 6/8/04)

Conductivity = **u=Reading x 1, m=Reading x 1,000**

1413 STD ID #: Cond/1-13-S

50.000 STD ID #: N/A

Comments:

3954-1 X = 214

RPD = <1.0

Analyzed By: SR & BH Date: 6/8/04 Time: 1410, 1610

Reviewed By: Date: 6/10/04

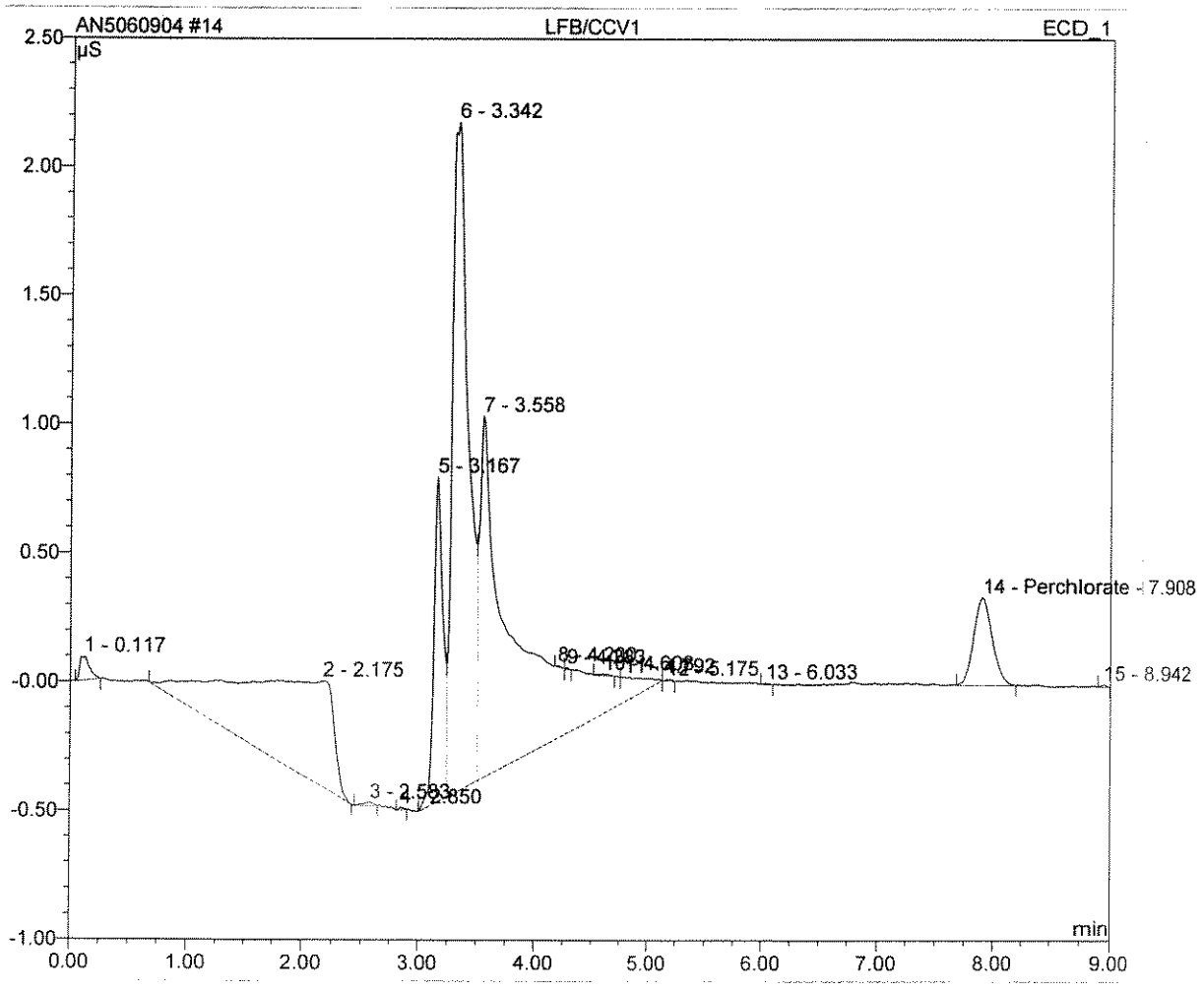
COND

00028

Sample Name:	**LFB/CCV1**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 11:17**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
14	7.91	Perchlorate	BMB	0.063	0.340	24.9349
		TOTAL:		0.06	0.34	24.93

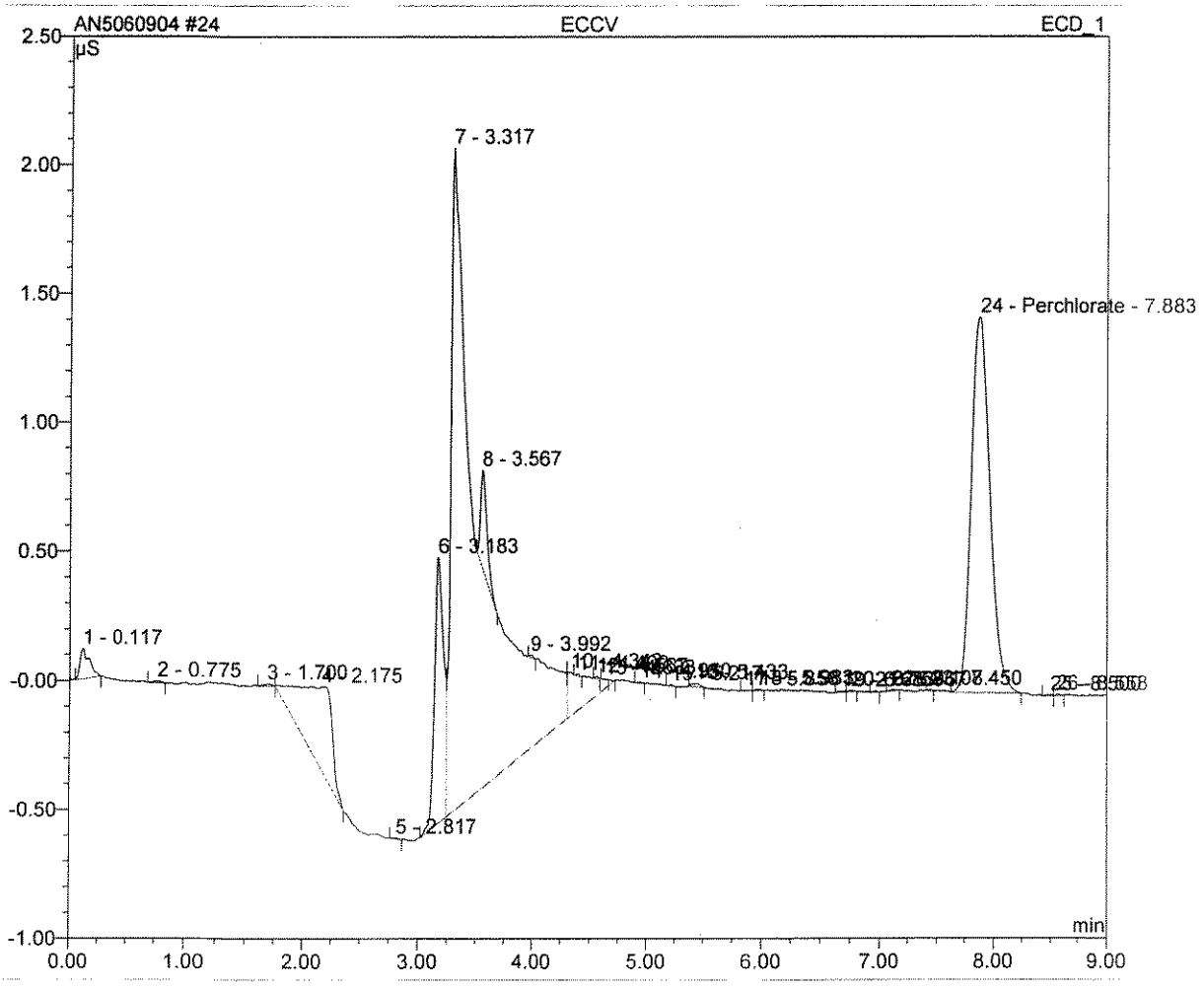
100



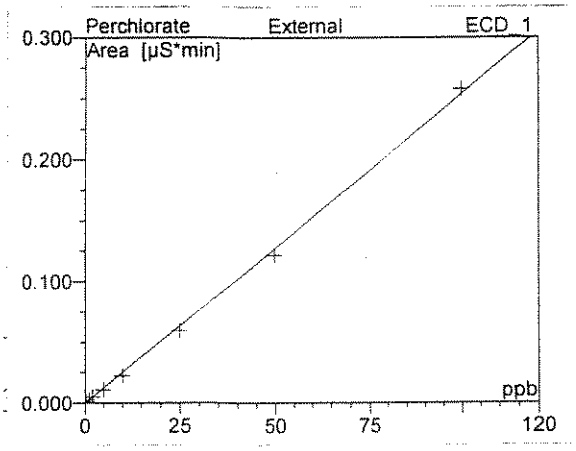
Sample Name:	**ECCV**	*Inj. Vol.:*	**1000.0**
Sample Type:	**unknown**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**09.06.04 13:11**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
24	7.88	Perchlorate	BMB	0.272	1.455	107.0159
		TOTAL:		0.27	1.45	107.02

107



Sequence:	**AN5050504**	*Inj. Vol.:*	**1000.0**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05/05/04 10:24**	*Run Time:*	**9.00**

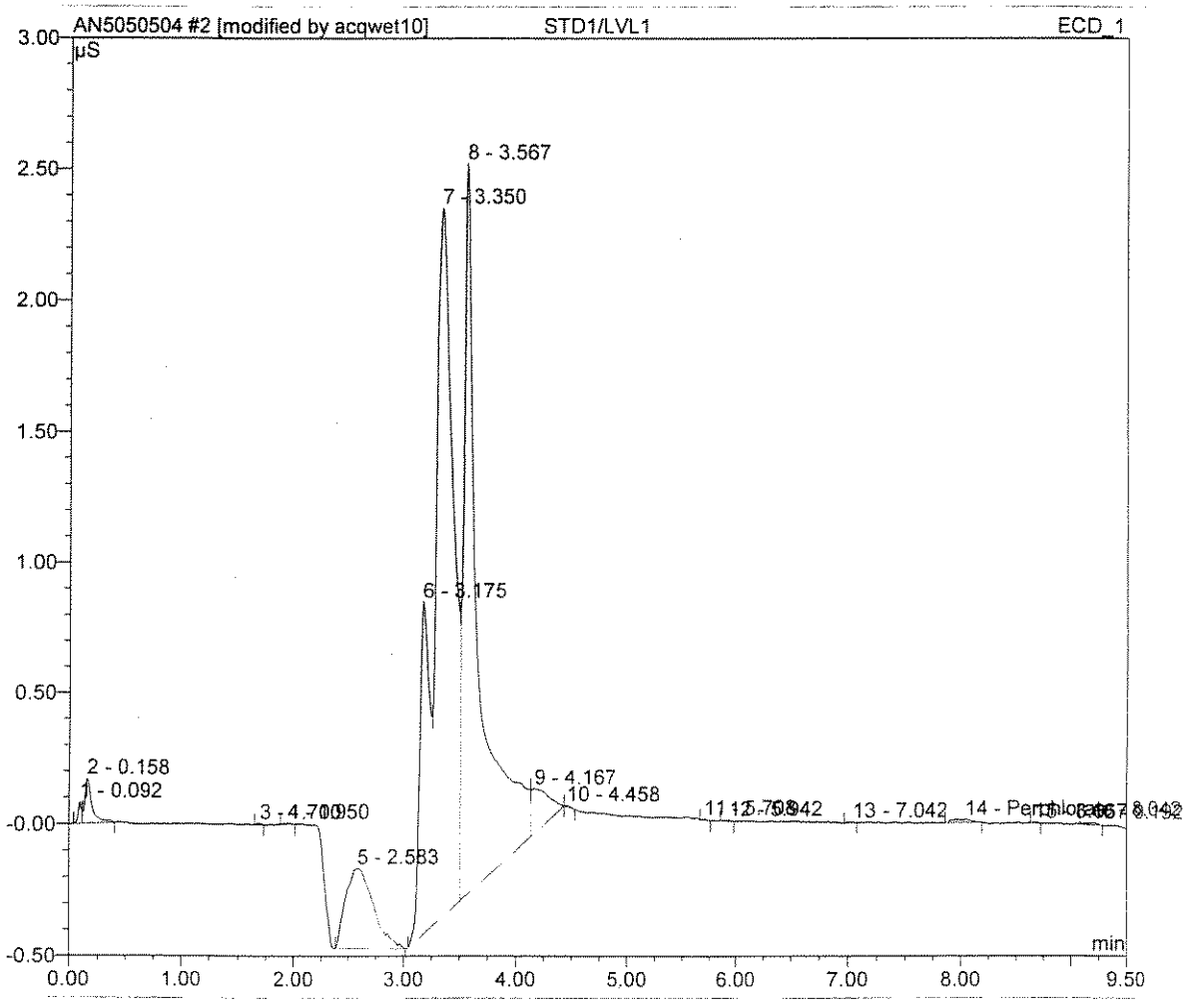


No.	Ret.Time min	Peak Name	Cal.Type	Points	Offset (C0)	Slope (C1)	Curve (C2)	Corr.Coeff. %
14	7.99	Perchlorate	Lin	8	0.000	0.003	0.000	99.957
AVERAGE:					0.0000	0.0025	0.0000	99.9569

Sample Name:	**STD1/LVL1**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 09:38**	*Run Time:*	**9.50**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
14	8.04	Perchlorate	BMB*	0.002	0.012	0.9259
		TOTAL:		0.00	0.01	0.93

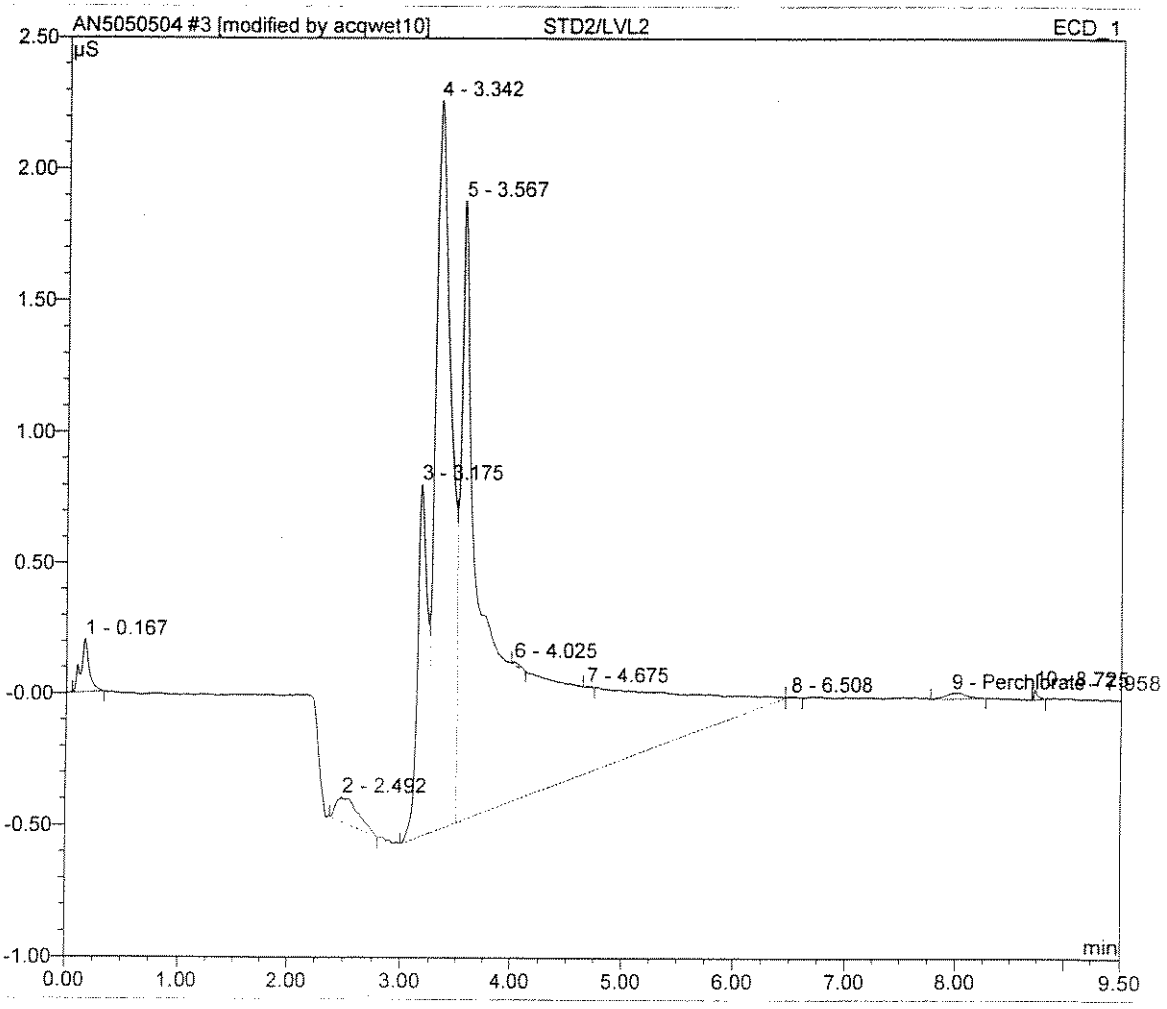
True Value 1.0 ppb



Sample Name:	**STD2/LVL2**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 09:50**	*Run Time:*	**9.50**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
9	7.96	Perchlorate	BMB*	0.005	0.021	2.0081
		TOTAL:		0.01	0.02	2.01

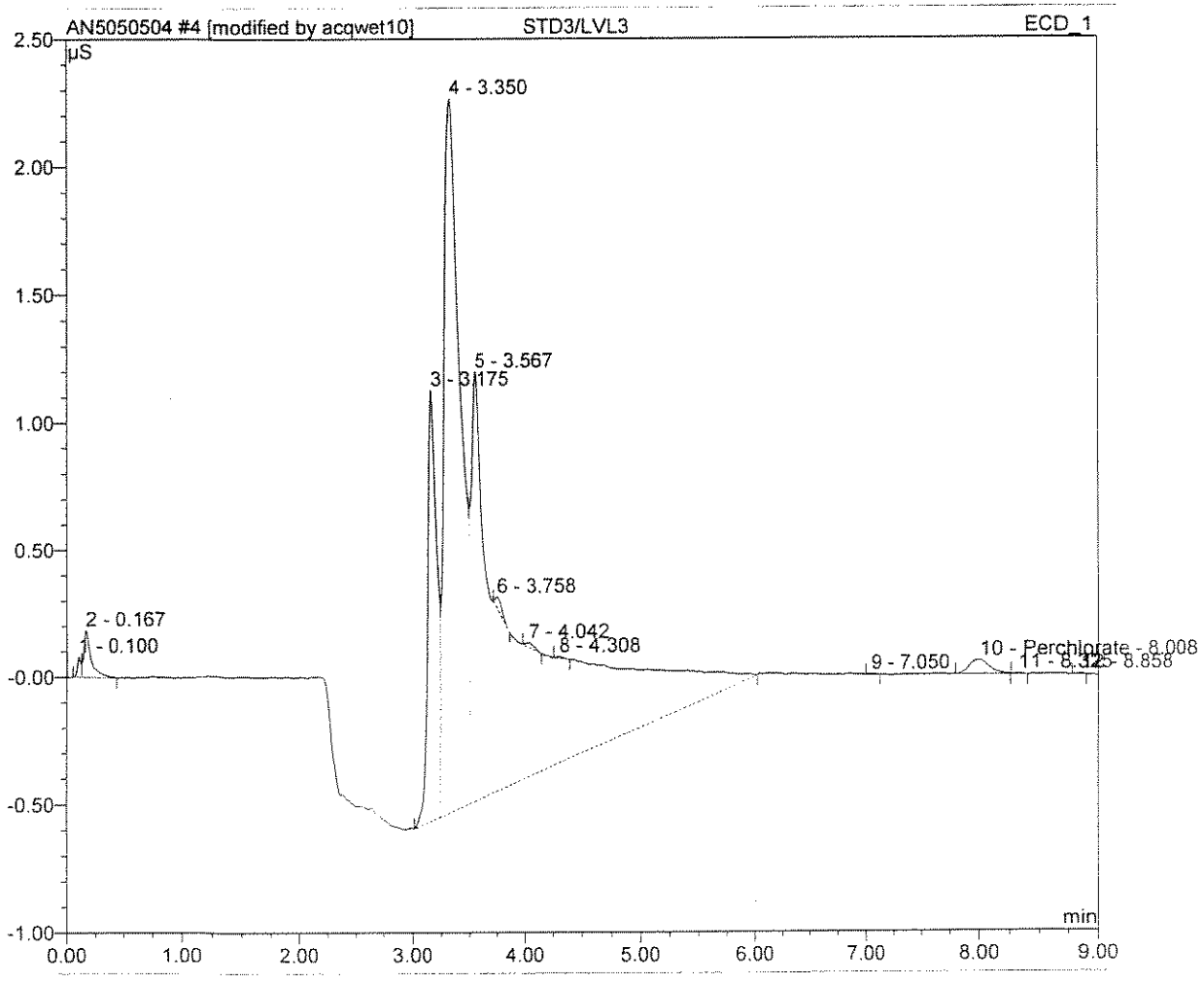
True Value
2.0 ppb



Sample Name:	**STD3/LVL3**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 10:02**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
10	8.01	Perchlorate	BMB*	0.011	0.056	4.2837
		TOTAL:		0.01	0.06	4.28

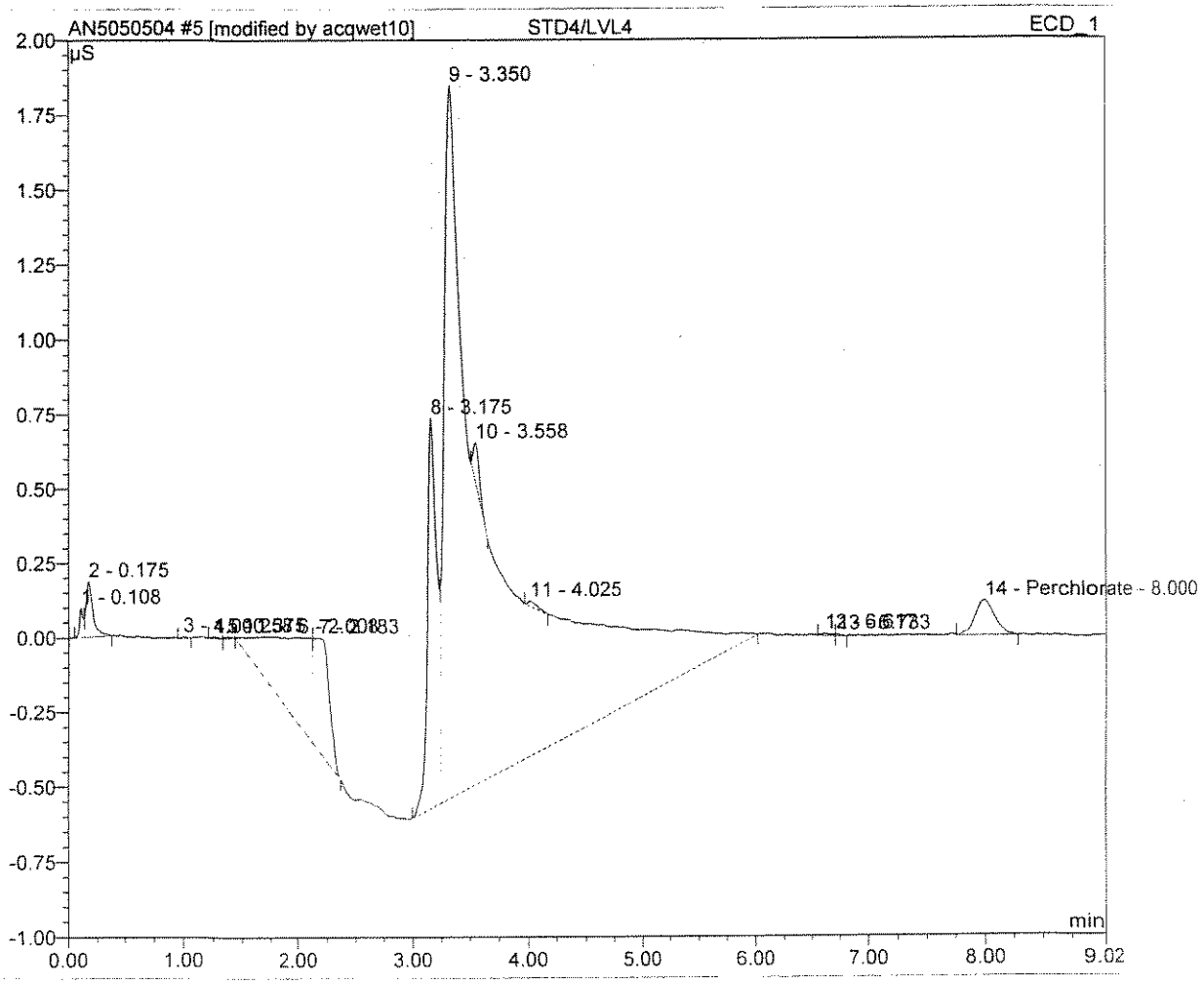
True value 5.0 ppb



Sample Name:	**STD4/LVL4**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 10:13**	*Run Time:*	**9.02**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
14	8.00	Perchlorate	BMB*	0.023	0.116	8.8678
		TOTAL:		0.02	0.12	8.87

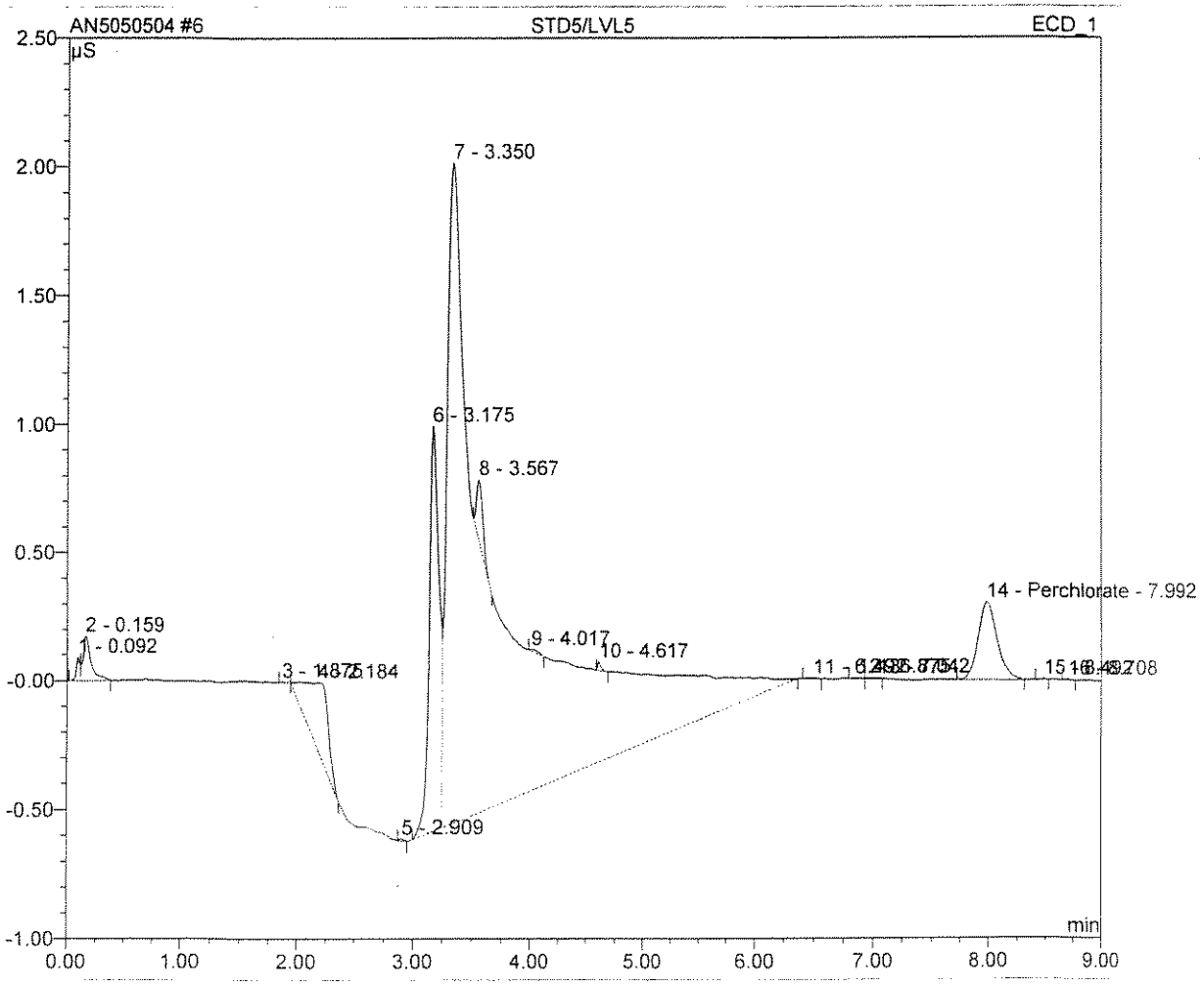
True Value 10.0 ppb



Sample Name:	**STD5/LVL5**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 10:24**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
14	7.99	Perchlorate	BMB	0.059	0.305	23.3757
		TOTAL:		0.06	0.30	23.38

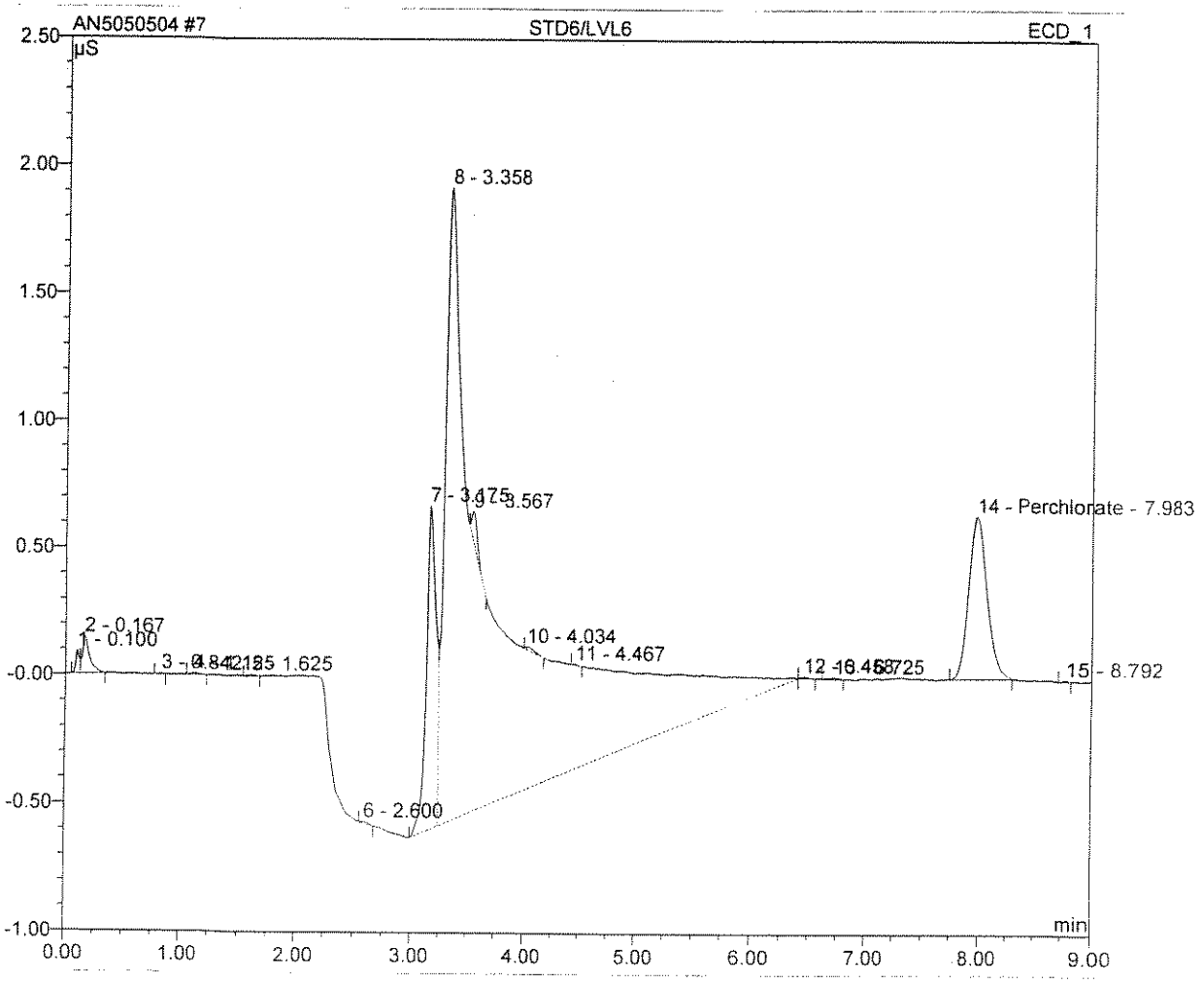
True Value 25.0 ppb



Sample Name:	**STD6/LVL6**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 10:36**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
14	7.98	Perchlorate	BMB	0.122	0.637	47.8996
		TOTAL:		0.12	0.64	47.90

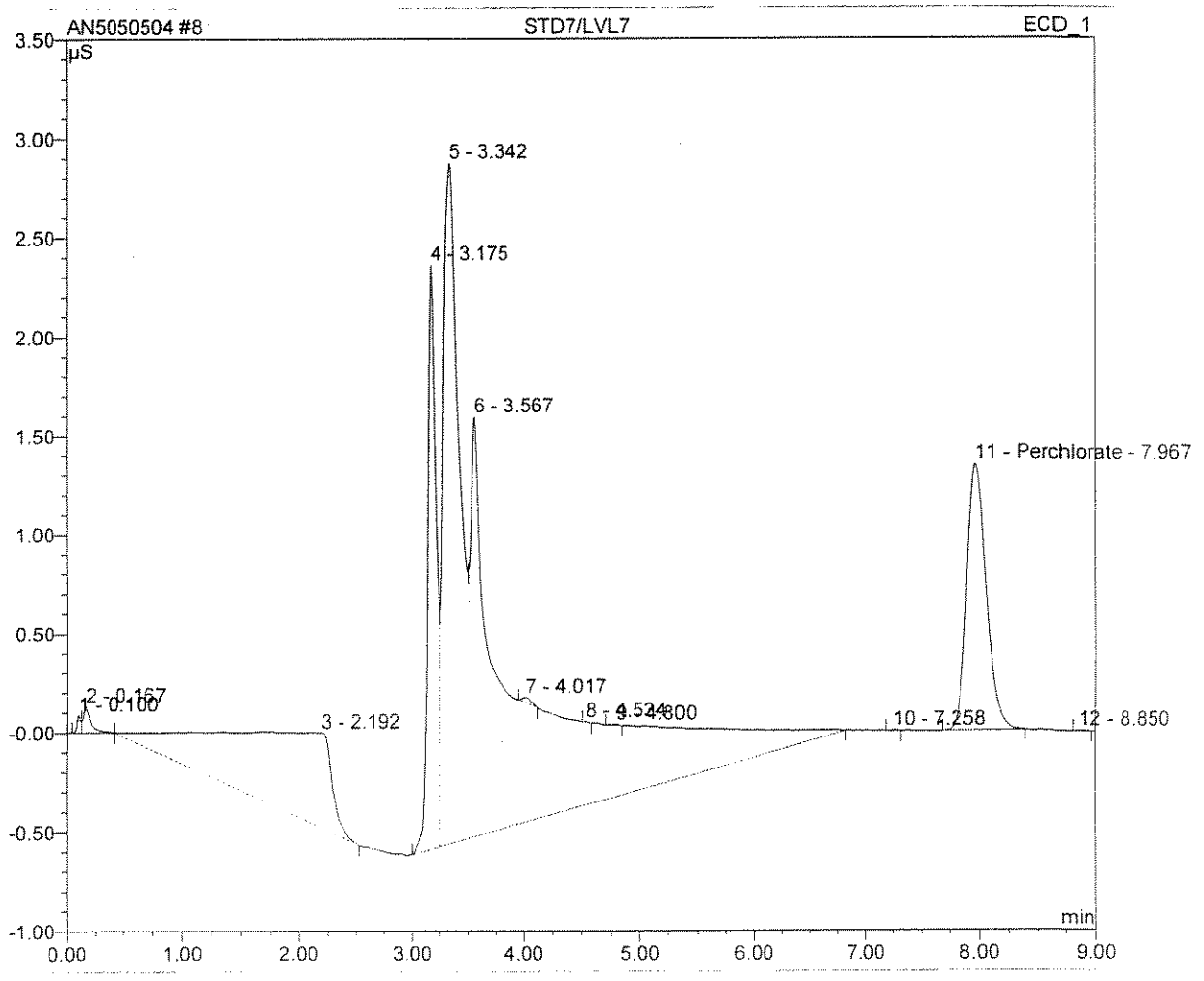
True Value 50.0 ppb



Sample Name:	**STD7/LVL7**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 10:47**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
11	7.97	Perchlorate	BMB	0.258	1.346	101.6140
		TOTAL:		0.26	1.35	101.61

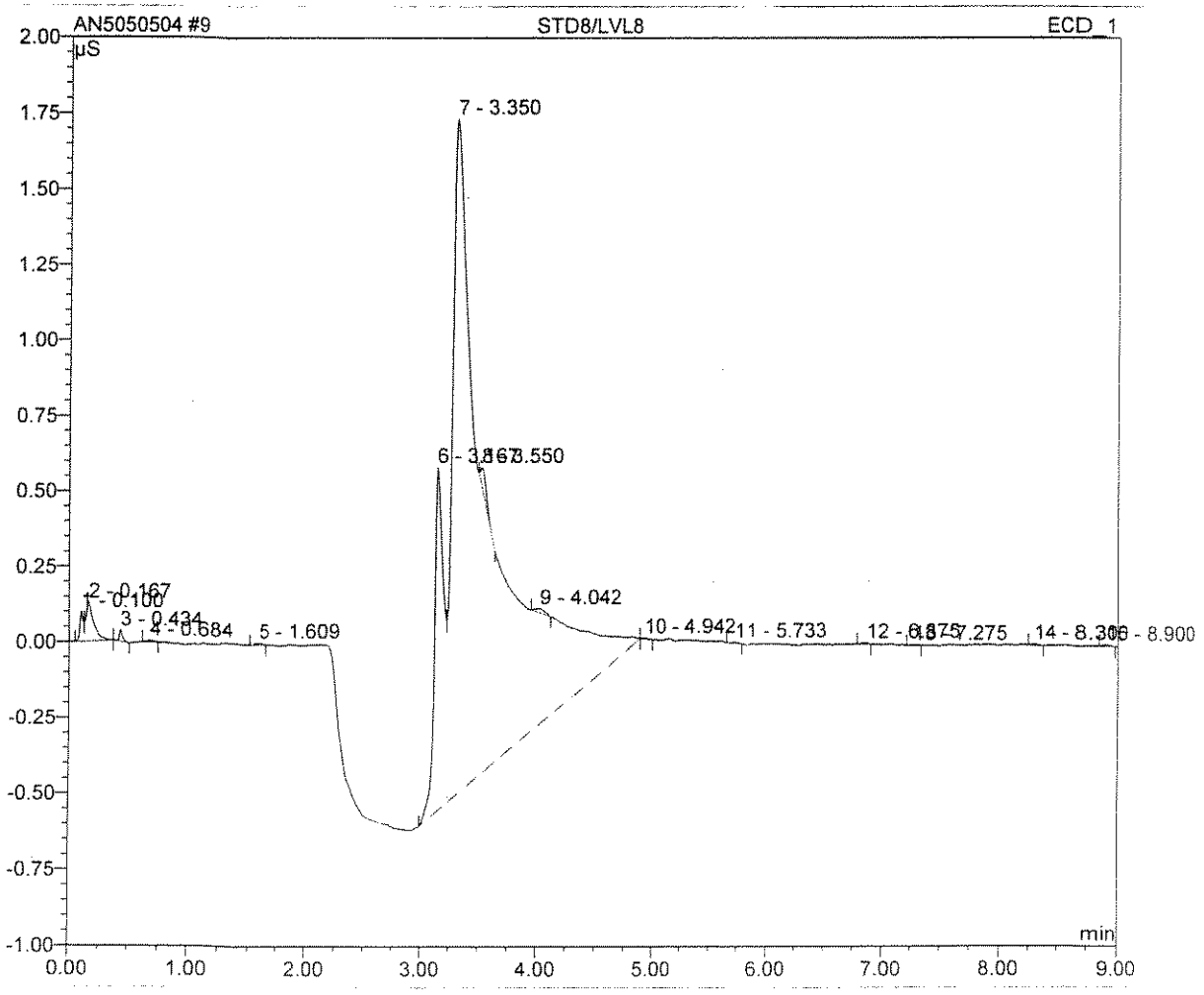
True Value 100.0 ppb



Sample Name:	**STD8/LVL8**	*Inj. Vol.:*	**1000.0**
Sample Type:	**standard**	*Dilution Factor:*	**1.0000**
Program:	**PERCHLORATE**	*Operator:*	**n.a.**
Inj. Date/Time:	**05.05.04 10:59**	*Run Time:*	**9.00**

No.	Time min	Peak Name	Type	Area µS*min	Height µS	Amount ppb
		TOTAL:		0.00	0.00	0.00

True value 0.0 ppb



APPENDIX D

DATA VALIDATION REPORTS

Data Validation Services

120 Cobble Creek Road P. O. Box 208
North Creek, N. Y. 12853
Phone 518-251-4429
Facsimile 518-251-4428

July 21, 2004

Brian Neumann
Shaw Environmental
13 British American Blvd.
Latham, NY 12110

RE: Validation of MRFA Malta Site Data Packages
CAS Sub Nos. R2420413, R2421508, and K2403905

Dear Mr. Neumann:

Review has been completed for the data packages generated by Columbia Analytical Services (CAS), pertaining to samples collected 3/2/04 through 5/25/04 at the MRFA Malta Site. Fourteen aqueous samples (including field duplicates) and cooler and trip blanks, were processed by CAS for site specific low level volatiles. Four of these and an additional sample were also analyzed for total and hexavalent chromium. One of the samples was analyzed for perchlorate, subcontracted to the CAS-Kelso laboratory. Methodologies utilized are those of the USEPA OLC02.1, EPA CLP ILM, SW846 7199, and 314.0.

Data validation was performed with guidance from the most current editions of the USEPA CLP National Functional Guidelines for Organic and Inorganic Data Review and the USEPA SOPs HW-2 and HW-6, with consideration for the specific methodologies. The following items were reviewed:

* Data Completeness
* Custody Documentation
* Holding Times
* Surrogate and Internal Standard Recoveries
* Matrix Spike Recoveries/Duplicate Correlations
* Field Duplicate Correlations
* Preparation/Calibration Blanks
* Control Spike/Laboratory Control Samples
* Instrumental Tunes
* Calibration/CRI Standards
* Instrument IDLs
* ICP Serial Dilutions
* Method Compliance
* Sample Result Verification

Those items showing deficiencies are discussed in the following sections of this report. All others were found to be acceptable as outlined in the above-mentioned validation procedures, and as applicable for the methodology. Unless noted specifically in the following text, reported results are substantiated by the raw data, and generated in compliance with protocol requirements.

In summary, sample processing was conducted primarily with compliance to protocol requirements and with adherence to quality criteria. Sample results are usable as reported, or with minor qualification as estimated. These are discussed in the following analytical sections.

Copies of laboratory case narratives are attached to this narrative, and should be reviewed in conjunction with this narrative. Data summary packages are also submitted with qualifiers applied in red ink to report forms.

Data Completeness

Data packages were complete as received, and no resubmissions were required.

Only one of the three custody forms accompanying the May shipments was complete with release signatures and dates and times of sample release. Due to oversight, the trip blank was not entered onto the custody form.

Low Level Volatile Analyses

Due to presence in the associated trip, cooler blanks, and method blanks, the detections of chloroform in the samples collected in May are considered external contamination, and edited to nondetection at the CRDL. No trip blank accompanied the samples collected in March, and the low level of chloroform detection in Influent is also suspect as potential contamination, and should be used with caution.

Due to the low relative response factors (RRFs) in the calibration standards (inherent with the methodology), the reporting limits for acetone and 2-butanone in all of the project samples should be considered estimated ("UJ" qualifier), possibly biased low. Continuing calibration standard responses were acceptable.

Matrix spikes of Influent and M-27S show acceptable accuracy and precision, with the exception of one duplicate correlation in the former that is 1 percentage point above the recommended limit. Recoveries of that analyte were acceptable, and no qualification is made.

Field duplicate correlations for Effluent/DUP-A and M-27D/Duplicate were acceptable.

The laboratory Forms 8A show incorrect acceptance limits for internal standard responses. The sample analyses meet the protocol requirement.

Total Chromium Analyses

Accuracy and precision of M-27S (as shown by matrix spike and duplicate evaluation) were acceptable. The ICP serial dilution evaluation was not applicable to these samples due to low detected concentrations.

Field duplicate correlation for M-27D and Duplicate was good.

Reported results are substantiated by the raw data, and generated in compliance with required protocols. Quality control parameter results meet validation requirements.

Hexavalent Chromium Analyses

The hexavalent chromium results are qualified as estimated ("UJ" or "J"), with a possible slight low bias, due to holding time exceedence (five to six hours beyond the 24 hour holding time).

Hexavalent chromium analyses for this event were performed by ion chromatography (method 7199) rather than method 7196.

Accuracy and precision of M-27S (as shown by matrix spike and duplicate evaluation), and the field duplicate correlation for M-27D and Duplicate was good.

Reported results are substantiated by the raw data, and generated in compliance with required protocols.

Perchlorate Analysis

Accuracy and precision of batch QC (as shown by matrix spike and duplicate evaluation) was acceptable.

Processing was compliant with protocol requirements, and raw data confirm reported results.

Please do not hesitate to contact me if questions or comments arise during your review of this report.

Very truly yours,

Judy Harry

CAS ASP/CLP BATCHING FORM / LOGIN SHEET

SDG #:INFLUENT
SUBMISSION R2420413
CLIENT: Shaw Environmental
CLIENT REP: Janice Jaeger
PROJECT: GE MRFA PROJECT #810066

BATCH COMPLETE: __yes_____
DISKETTE REQUESTED: Y___ N__X__
DATE: 03/03/04
CUSTODY SEAL: PRESENT/ABSENT:
CHAIN OF CUSTODY: PRESENT/ABSENT:

DATE REVISED:
DATE DUE: 03/31/04
PROTOCOL: CLP
SHIPPING No.:
SUMMARY PKG: Y___X__ N

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS	REMARKS SAMPLE CONDITION
710506QC	INFLUENT	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
710507	EFFLUENT	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
710508	DUP A	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
~~710509~~	~~TRIP BLANK~~	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
710510	COOLER BLANK	WATER	OLC 2.1 VOA	3/2/04	3/3/04			
no trip blank received SMJ 3/3/04								

CAS ASP/CLP BATCHING FORM / LOGIN SHEET

SDG #: DGC-4S	BATCH COMPLETE: __yes_____	DATE REVISED:
SUBMISSION R2421508	DISKETTE REQUESTED: Y__X_ N____	DATE DUE: 06/23/04
CLIENT: Shaw Environmental	DATE: 05/28/04	PROTOCOL: CLP
CLIENT REP: Janice Jaeger	CUSTODY SEAL: PRESENT/ABSENT:	SHIPPING No.:
PROJECT: MRFA	CHAIN OF CUSTODY: PRESENT/ABSENT:	SUMMARY PKG: Y__X_ N

CAS JOB #	CLIENT/EPA ID	MATRIX	REQUESTED PARAMETERS	DATE SAMPLED	DATE RECEIVED	pH (SOLIDS)	% SOLIDS	REMARKS SAMPLE CONDITION
730317	SYSTEM INFLUENT	WATER	OLC2.1VOA*	5/25/04	5/26/04			
730331	DGC-4S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730332	DGC-3S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730333	M33I	WATER	OLC2.1VOA	5/25/04	5/26/04			
730334	M33S	WATER	OLC2.1VOA	5/25/04	5/26/04			
730335	SW D	WATER	OLC2.1VOA	5/25/04	5/26/04			
730336	SW B	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730337	M27D	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730338QC	M27S	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730339	SW A	WATER	OLC2.1VOA	5/25/04	5/26/04			
730340	13S	WATER	CR6,CR	5/25/04	5/26/04			
730341	DUPLICATE	WATER	OLC2.1VOA,CR6,CR	5/25/04	5/26/04			
730342	COOLER BLANK	WATER	OLC2.1VOA	5/25/04	5/26/04			
730463	SYSTEM EFFLUENT	WATER	OLC2.1VOA	5/25/04	5/26/04			
731049	TRIP BLANK	WATER	OLC2.1VOA	5/25/04	5/28/04 2			
			* perchlorate sub to rels					

CASE NARRATIVE

COMPANY: Shaw Environmental
GE MRFA Project #810066
SUBMISSION #: R2420413

Shaw water samples were collected on 03/02/04 and received at CAS on 03/03/04 in good condition at a cooler temperature of 3 C. A trip blank was not received with the samples and at the client's request, the samples were analyzed.

VOLATILE ORGANICS

Three water samples and one cooler blank were analyzed for a Site Specific List of Volatiles by method OLC 2.1.

All Tuning criteria for BFB were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within limits.

All surrogate standard recoveries were within limits.

All samples were analyzed within required holding times.

Site specific QC was performed on Influent. All MS/MSD recoveries were within limits. All Blank Spike recoveries were within limits. All RPD's were within limits except Trichloroethene and has been flagged with an "*".

The Laboratory Blanks associated with these samples was free of contamination.

No other analytical or QC problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in the hard copy package has been authorized by the Laboratory Manager or his designee, as verified by the following signature: Michael K Perry

CASE NARRATIVE

COMPANY: Shaw Environmental
MRFA
SUBMISSION #: R2421508

Shaw water samples were collected on 05/25/04 and received at CAS on 05/26/04 in good condition at a cooler temperature of 6 C.

INORGANICS

Five water samples were analyzed for Total Chromium by CLP methods and Hexavalent Chromium by 7199.

Site specific QC was performed on M-27S. All MS and Blank spike recoveries were within limits. All RPD's were within limits.

Due to an instrument malfunction, the Hexavalent Chromium samples could not be analyzed by method 7196A and were analyzed by method 7199 as mentioned above and also were analyzed slightly outside the 24 hour holding time.

No other analytical or QC problems were encountered.

VOLATILE ORGANICS

Thirteen water samples, one cooler blank and one trip blanks were analyzed for a Site Specific List of Volatiles by method OLC 2.1.

All Tuning criteria for BFB were within limits.

The initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within limits.

All surrogate standard recoveries were within limits.

All samples were analyzed within required holding times.

Site specific QC was performed on M-27S. All MS/MSD recoveries were within limits. All Blank Spike recoveries were within limits. All RPD's were within limits.

The Laboratory Blanks associated with these samples were free of contamination except VBLK01 contained a low level hit for Methylene Chloride and VBLK02 had a low level hit for Chloroform. All affecte data has been flagged with a "B".

No other analytical or QC problems were encountered.

PERCHLORATE

Water samples were subcontacted to CAS-Kelso for Perchlorate analysis. Their complete data package follows.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in the hard copy package has been authorized by the Laboratory Manager or his designee, as verified by the following signature;

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Shaw Environmental and Infrastructure	**Service Request No.:**	K2403905
Project:	MFRA	**Date Received:**	5/26/2004
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample was received for analysis at Columbia Analytical Services on 5/26/2004. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Approved by _____ **Date** 6/15/04

APPENDIX E

AIR STRIPPER FLOW DATA

Appendix E

Air Stripper Flow Data

Date		Well #2 Flow (gal)	Well #1 Flow (gal)	Well #2 Average (gpm)	Well #1 Average (gpm)	Total Daily Average Flow (gpm)
12/18/2003	Total	1,950	2,090	1.35	1.45	2.81
12/19/2003	Total	2,390	2,570	1.66	1.78	3.44
12/20/2003	Total	2,470	2,640	1.72	1.83	3.55
12/21/2003	Total	2,680	2,880	1.86	2.00	3.86
12/22/2003	Total	1,890	2,030	1.31	1.41	2.72
12/23/2003	Total	1,110	1,180	0.77	0.82	1.59
12/24/2003	Total	910	990	0.63	0.69	1.32
12/25/2003	Total	1,040	1,110	0.72	0.77	1.49
12/26/2003	Total	890	950	0.62	0.66	1.28
12/27/2003	Total	930	990	0.65	0.69	1.33
12/28/2003	Total	1,100	1,180	0.76	0.82	1.58
12/29/2003	Total	1,230	1,900	0.85	1.32	2.17
12/30/2003	Total	2,020	1,320	1.40	0.92	2.32
12/31/2003	Total	1,060	1,130	0.74	0.78	1.52
1/1/2004	Total	1,140	1,230	0.79	0.85	1.65
1/2/2004	Total	980	1,050	0.68	0.73	1.41
1/3/2004	Total	1,000	1,070	0.69	0.74	1.44
1/4/2004	Total	1,280	1,370	0.89	0.95	1.84
1/5/2004	Total	1,160	1,240	0.81	0.86	1.67
1/6/2004	Total	1,260	1,350	0.88	0.94	1.81
1/7/2004	Total	1,330	1,420	0.92	0.99	1.91
1/8/2004	Total	2,080	2,240	1.44	1.56	3.00
1/9/2004	Total	2,080	2,230	1.44	1.55	2.99
1/10/2004	Total	1,090	1,170	0.76	0.81	1.57
1/11/2004	Total	3,820	4,140	2.65	2.88	5.53
1/12/2004	Total	4,890	5,320	3.40	3.69	7.09
1/13/2004	Total	1,850	1,980	1.28	1.38	2.66
1/14/2004	Total	1,500	1,620	1.04	1.13	2.17
1/15/2004	Total	1,670	1,800	1.16	1.25	2.41
1/16/2004	Total	1,040	1,120	0.72	0.78	1.50
1/17/2004	Total	1,000	1,070	0.69	0.74	1.44
1/18/2004	Total	1,130	1,220	0.78	0.85	1.63
1/19/2004	Total	1,560	1,660	1.08	1.15	2.24
1/20/2004	Total	1,520	1,590	1.06	1.10	2.16
1/21/2004	Total	1,560	1,260	1.08	0.88	1.96
1/22/2004	Total	1,840	1,360	1.28	0.94	2.22
1/23/2004	Total	1,310	1,000	0.91	0.69	1.60
1/24/2004	Total	1,270	990	0.88	0.69	1.57
1/25/2004	Total	2,120	1,690	1.47	1.17	2.65
1/26/2004	Total	1,770	1,430	1.23	0.99	2.22
1/27/2004	Total	2,030	1,660	1.41	1.15	2.56
1/28/2004	Total	1,980	1,650	1.38	1.15	2.52
1/29/2004	Total	2,090	1,760	1.45	1.22	2.67
1/30/2004	Total	1,210	1,040	0.84	0.72	1.56
1/31/2004	Total	1,210	1,040	0.84	0.72	1.56
2/1/2004	Total	1,220	1,050	0.85	0.73	1.58
2/2/2004	Total	1,610	1,390	1.12	0.97	2.08

Appendix E

Air Stripper Flow Data

Date		Well #2 Flow (gal)	Well #1 Flow (gal)	Well #2 Average (gpm)	Well #1 Average (gpm)	Total Daily Average Flow (gpm)
2/3/2004	Total	2,000	1,730	1.39	1.20	2.59
2/4/2004	Total	2,230	1,930	1.55	1.34	2.89
2/5/2004	Total	2,540	2,210	1.76	1.53	3.30
2/6/2004	Total	2,070	1,800	1.44	1.25	2.69
2/7/2004	Total	1,610	1,410	1.12	0.98	2.10
2/8/2004	Total	1,410	1,260	0.98	0.88	1.85
2/9/2004	Total	1,930	1,720	1.34	1.19	2.53
2/10/2004	Total	1,460	1,310	1.01	0.91	1.92
2/11/2004	Total	1,560	1,390	1.08	0.97	2.05
2/12/2004	Total	1,870	1,700	1.30	1.18	2.48
2/13/2004	Total	1,900	1,730	1.32	1.20	2.52
2/14/2004	Total	1,670	1,520	1.16	1.06	2.22
2/15/2004	Total	1,520	1,400	1.06	0.97	2.03
2/16/2004	Total	1,880	1,700	1.31	1.18	2.49
2/17/2004	Total	1,530	1,390	1.06	0.97	2.03
2/18/2004	Total	1,370	1,250	0.95	0.87	1.82
2/19/2004	Total	1,530	1,380	1.06	0.96	2.02
2/20/2004	Total	1,650	1,500	1.15	1.04	2.19
2/21/2004	Total	1,110	1,020	0.77	0.71	1.48
2/22/2004	Total	880	810	0.61	0.56	1.17
2/23/2004	Total	1,230	1,130	0.85	0.78	1.64
2/24/2004	Total	1,850	1,700	1.28	1.18	2.47
2/25/2004	Total	1,850	1,710	1.28	1.19	2.47
2/26/2004	Total	1,750	1,620	1.22	1.13	2.34
2/27/2004	Total	700	640	0.49	0.44	0.93
2/28/2004	Total	0	0	0.00	0.00	0.00
2/29/2004	Total	0	0	0.00	0.00	0.00
3/1/2004	Total	90	80	0.06	0.06	0.12
3/2/2004	Total	5,530	4,770	3.84	3.31	7.15
3/3/2004	Total	3,420	2,990	2.38	2.08	4.45
3/4/2004	Total	2,330	2,110	1.62	1.47	3.08
3/5/2004	Total	1,330	1,200	0.92	0.83	1.76
3/6/2004	Total	1,100	1,010	0.76	0.70	1.47
3/7/2004	Total	1,110	1,010	0.77	0.70	1.47
3/8/2004	Total	1,390	1,270	0.97	0.88	1.85
3/9/2004	Total	1,280	1,180	0.89	0.82	1.71
3/10/2004	Total	2,070	1,900	1.44	1.32	2.76
3/11/2004	Total	1,320	1,220	0.92	0.85	1.76
3/12/2004	Total	1,610	1,490	1.12	1.03	2.15
3/13/2004	Total	1,250	1,150	0.87	0.80	1.67
3/14/2004	Total	1,150	1,070	0.80	0.74	1.54
3/15/2004	Total	1,590	1,450	1.10	1.01	2.11
3/16/2004	Total	1,800	1,640	1.25	1.14	2.39
3/17/2004	Total	2,130	1,960	1.48	1.36	2.84
3/18/2004	Total	1,490	1,390	1.03	0.97	2.00
3/19/2004	Total	1,600	1,480	1.11	1.03	2.14
3/20/2004	Total	1,060	970	0.74	0.67	1.41

Appendix E

Air Stripper Flow Data

Date		Well #2 Flow (gal)	Well #1 Flow (gal)	Well #2 Average (gpm)	Well #1 Average (gpm)	Total Daily Average Flow (gpm)
3/21/2004	Total	1,060	990	0.74	0.69	1.42
3/22/2004	Total	1,670	1,550	1.16	1.08	2.24
3/23/2004	Total	1,840	1,700	1.28	1.18	2.46
3/24/2004	Total	1,630	1,510	1.13	1.05	2.18
3/25/2004	Total	1,260	1,170	0.88	0.81	1.69
3/26/2004	Total	1,250	1,160	0.87	0.81	1.67
3/27/2004	Total	970	900	0.67	0.63	1.30
3/28/2004	Total	1,020	960	0.71	0.67	1.38
3/29/2004	Total	1,280	1,330	0.89	0.92	1.81
3/30/2004	Total	1,260	1,420	0.88	0.99	1.86
3/31/2004	Total	1,160	1,320	0.81	0.92	1.72
4/1/2004	Total	1,540	1,740	1.07	1.21	2.28
4/2/2004	Total	1,550	1,750	1.08	1.22	2.29
4/3/2004	Total	920	1,040	0.64	0.72	1.36
4/4/2004	Total	920	1,040	0.64	0.72	1.36
4/5/2004	Total	1,310	1,480	0.91	1.03	1.94
4/6/2004	Total	1,770	1,980	1.23	1.38	2.60
4/7/2004	Total	1,640	1,850	1.14	1.28	2.42
4/8/2004	Total	1,450	1,630	1.01	1.13	2.14
4/9/2004	Total	1,320	1,470	0.92	1.02	1.94
4/10/2004	Total	970	1,090	0.67	0.76	1.43
4/11/2004	Total	930	1,040	0.65	0.72	1.37
4/12/2004	Total	1,950	2,150	1.35	1.49	2.85
4/13/2004	Total	1,310	1,460	0.91	1.01	1.92
4/14/2004	Total	1,470	1,610	1.02	1.12	2.14
4/15/2004	Total	1,660	1,830	1.15	1.27	2.42
4/16/2004	Total	1,420	1,570	0.99	1.09	2.08
4/17/2004	Total	1,370	1,490	0.95	1.03	1.99
4/18/2004	Total	1,260	1,370	0.88	0.95	1.83
4/19/2004	Total	1,780	1,930	1.24	1.34	2.58
4/20/2004	Total	1,940	2,110	1.35	1.47	2.81
4/21/2004	Total	2,150	2,340	1.49	1.63	3.12
4/22/2004	Total	2,380	2,580	1.65	1.79	3.44
4/23/2004	Total	2,810	3,040	1.95	2.11	4.06
4/24/2004	Total	2,370	2,580	1.65	1.79	3.44
4/25/2004	Total	2,290	2,480	1.59	1.72	3.31
4/26/2004	Total	3,460	3,760	2.40	2.61	5.01
4/27/2004	Total	3,610	3,910	2.51	2.72	5.22
4/28/2004	Total	3,750	4,080	2.60	2.83	5.44
4/29/2004	Total	3,420	3,720	2.38	2.58	4.96
4/30/2004	Total	1,260	1,380	0.88	0.96	1.83
5/1/2004	Total	4,930	5,320	3.42	3.69	7.12
5/2/2004	Total	7,350	7,740	5.10	5.38	10.48
5/3/2004	Total	7,290	7,670	5.06	5.33	10.39
5/4/2004	Total	7,350	7,700	5.10	5.35	10.45
5/5/2004	Total	7,350	7,710	5.10	5.35	10.46
5/6/2004	Total	7,360	7,720	5.11	5.36	10.47

Appendix E

Air Stripper Flow Data

Date		Well #2 Flow (gal)	Well #1 Flow (gal)	Well #2 Average (gpm)	Well #1 Average (gpm)	Total Daily Average Flow (gpm)
5/7/2004	Total	3,070	3,230	2.13	2.24	4.38
5/8/2004	Total	1,120	1,190	0.78	0.83	1.60
5/9/2004	Total	1,000	1,080	0.69	0.75	1.44
5/10/2004	Total	1,520	1,630	1.06	1.13	2.19
5/11/2004	Total	1,480	1,600	1.03	1.11	2.14
5/12/2004	Total	1,170	1,250	0.81	0.87	1.68
5/13/2004	Total	1,150	1,240	0.80	0.86	1.66
5/14/2004	Total	1,300	1,400	0.90	0.97	1.88
5/15/2004	Total	710	770	0.49	0.53	1.03
5/16/2004	Total	550	610	0.38	0.42	0.81
5/17/2004	Total	1,460	1,120	1.01	0.78	1.79
5/18/2004	Total	3,140	1,190	2.18	0.83	3.01
5/19/2004	Total	1,580	640	1.10	0.44	1.54
5/20/2004	Total	1,240	550	0.86	0.38	1.24
5/21/2004	Total	1,720	780	1.19	0.54	1.74
5/22/2004	Total	780	360	0.54	0.25	0.79
5/23/2004	Total	700	330	0.49	0.23	0.72
5/24/2004	Total	1,080	510	0.75	0.35	1.10
5/25/2004	Total	1,280	590	0.89	0.41	1.30
5/26/2004	Total	3,640	3,650	2.53	2.53	5.06
5/27/2004	Total	7,500	7,490	5.21	5.20	10.41
5/28/2004	Total	7,540	7,040	5.24	4.89	10.13
5/29/2004	Total	7,540	7,000	5.24	4.86	10.10
5/30/2004	Total	4,650	4,270	3.23	2.97	6.19
5/31/2004	Total	990	900	0.69	0.63	1.31
6/1/2004	Total	1,280	1,230	0.89	0.85	1.74
6/2/2004	Total	1,670	1,680	1.16	1.17	2.33
6/3/2004	Total	1,710	1,720	1.19	1.19	2.38
6/4/2004	Total	1,560	1,570	1.08	1.09	2.17
6/5/2004	Total	1,050	1,070	0.73	0.74	1.47
6/6/2004	Total	830	840	0.58	0.58	1.16
6/7/2004	Total	1,550	1,590	1.08	1.10	2.18
6/8/2004	Total	2,370	2,470	1.65	1.72	3.36
6/9/2004	Total	1,960	2,080	1.36	1.44	2.81
6/10/2004	Total	1,840	1,980	1.28	1.38	2.65
6/11/2004	Total	3,270	3,610	2.27	2.51	4.78
6/12/2004	Total	4,470	5,150	3.10	3.58	6.68
6/13/2004	Total	4,620	5,430	3.21	3.77	6.98
6/14/2004	Total	4,770	5,620	3.31	3.90	7.22
6/15/2004	Total	4,540	5,380	3.15	3.74	6.89
6/16/2004	Total	4,560	5,430	3.17	3.77	6.94
6/17/2004	Total	4,560	5,490	3.17	3.81	6.98
6/18/2004	Total	6,180	7,380	4.29	5.13	9.42
6/19/2004	Total	7,410	3,780	5.15	2.63	7.77
6/20/2004	Total	7,420	8,880	5.15	6.17	11.32
6/21/2004	Total	7,420	8,880	5.15	6.17	11.32
6/22/2004	Total	5,110	8,860	3.55	6.15	9.70

Appendix E

Air Stripper Flow Data

Date		Well #2 Flow (gal)	Well #1 Flow (gal)	Well #2 Average (gpm)	Well #1 Average (gpm)	Total Daily Average Flow (gpm)
6/23/2004	Total	7,430	8,860	5.16	6.15	11.31
6/24/2004	Total	7,410	8,850	5.15	6.15	11.29
6/25/2004	Total	7,420	8,850	5.15	6.15	11.30
6/26/2004	Total	6,660	7,970	4.63	5.53	10.16
6/27/2004	Total	5,780	6,970	4.01	4.84	8.85
6/28/2004	Total	6,720	8,120	4.67	5.64	10.31
6/29/2004	Total	7,410	8,940	5.15	6.21	11.35
6/30/2004	Total	6,910	8,310	4.80	5.77	10.57
7/1/2004	Total	7,460	8,950	5.18	6.22	11.40
7/2/2004	Total	7,420	8,940	5.15	6.21	11.36
7/3/2004	Total	7,430	8,940	5.16	6.21	11.37
7/4/2004	Total	7,430	8,930	5.16	6.20	11.36
7/5/2004	Total	7,420	8,920	5.15	6.19	11.35
7/6/2004	Total	7,190	8,640	4.99	6.00	10.99
7/7/2004	Total	7,430	8,930	5.16	6.20	11.36
7/8/2004	Total	7,430	8,920	5.16	6.19	11.35
7/9/2004	Total	7,430	8,920	5.16	6.19	11.35
7/10/2004	Total	7,430	8,920	5.16	6.19	11.35
7/11/2004	Total	7,440	8,920	5.17	6.19	11.36
7/12/2004	Total	7,440	8,900	5.17	6.18	11.35
7/13/2004	Total	7,440	8,900	5.17	6.18	11.35
7/14/2004	Total	7,440	8,890	5.17	6.17	11.34
7/15/2004	Total	6,980	7,930	4.85	5.51	10.35
7/16/2004	Total	6,680	7,990	4.64	5.55	10.19
7/17/2004	Total	7,430	8,890	5.16	6.17	11.33
7/18/2004	Total	7,450	8,880	5.17	6.17	11.34
7/19/2004	Total	7,460	8,870	5.18	6.16	11.34
7/20/2004	Total	7,450	8,880	5.17	6.17	11.34
7/21/2004	Total	7,460	8,880	5.18	6.17	11.35
7/22/2004	Total	7,460	8,860	5.18	6.15	11.33
7/23/2004	Total	7,450	8,860	5.17	6.15	11.33
7/24/2004	Total	7,450	8,860	5.17	6.15	11.33
7/25/2004	Total	7,450	8,840	5.17	6.14	11.31
7/26/2004	Total	7,450	8,850	5.17	6.15	11.32
7/27/2004	Total	7,440	8,870	5.17	6.16	11.33
7/28/2004	Total	7,440	8,870	5.17	6.16	11.33
7/29/2004	Total	7,460	8,880	5.18	6.17	11.35
7/30/2004	Total	7,470	8,880	5.19	6.17	11.35
7/31/2004	Total	7,460	8,870	5.18	6.16	11.34
8/1/2004	Total	7,470	8,880	5.19	6.17	11.35
Grand Total		**694,570**	**753,710**	**2.116**	**2.296**	**4.411**