

FINAL REPORT

**GROUNDWATER SAMPLING REPORT
JULY 2004 SAMPLING EVENT
FOR OPERABLE UNIT 6 (SITES 3 AND 10)**

**NAVAL WEAPONS STATION EARLE
COLTS NECK, NEW JERSEY**

**CONTRACT NO. N62472-03-D-0802
CONTRACT TASK ORDER 005**

Prepared for:
**Department of the Navy
Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop No. 82
Lester, Pennsylvania 19113-2090**

February 2005

Prepared by:
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Environmental
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22 February 2005

Engineering Field Activity Northeast
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, PA 19113-2090
Attn: Code EV21/Ms. Michele DiGeambeardino



**Subject: US NAVY CONTRACT NO. N62472-03-D-0802
CONTRACT DELIVERY ORDER NO. 0005
NWS EARLE, COLTS NECK, NEW JERSEY
SITES 3 AND 10 FINAL REPORT
2004 ANNUAL LONG TERM MONITORING REPORT**

Dear Ms. DiGeambeardino:

Please find enclosed two hardcopies and two electronic copies of the 2004 Annual Long Term Monitoring Report for Sites 3 and 10 at Naval Weapons Station Earle in Colts Neck, New Jersey.

Electronic Data Deliverable (EDD) files will be submitted to the New Jersey Department of Environmental Protection (NJDEP) in accordance with NJDEP's data deliverable requirements.

Please contact either of the undersigned at 610-431-8731 if you have any questions or comments regarding this submittal.

Sincerely,
ECOR Solutions, Inc.

A handwritten signature in black ink that reads 'Kimberly Goslin'.

Kimberly Goslin
Project Supervisor

A handwritten signature in black ink that reads 'Patrick Schauble for'.

Patrick Schauble, P.E.
Project Manager

Enclosures 2 Hard Copies
 2 Electronic Copies

cc: Mr. John Mayhew – EFANE (1 electronic copy)
Mr. Jason Speicher – EFANE (1 electronic copy)
Ms. Jessica Mollin – EPA Region II (2 electronic copies)
Mr. Robert Marcolina – NJDEP (2 electronic copies, 2 EDD sets)
Ms. Alicia Hartmann – NWS Earle (2 hard copies, 2 electronic copies)
Mr. Dan Zari – NWS Earle (1 electronic copy)
Main File – ECOR (1 hard copy)

**ENGINEERING FIELD ACTIVITY NORTHEAST
GROUNDWATER MONITORING REPORT
FOR OPERABLE UNIT 6 (SITES 3 AND 10)
NAVAL WEAPONS STATION EARLE**

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1.0 INTRODUCTION

ECOR Solutions, Inc. (ECOR) has been contracted by the Engineering Field Activity Northeast (EFANE) to prepare a groundwater sampling report for the groundwater monitoring wells of Operable Unit 6 (Sites 3 and 10) at the Naval Weapons Station Earle (NWS Earle) in Colts Neck, New Jersey. This sampling report was prepared to document the annual groundwater sampling event that was performed in July 2004. This groundwater sampling report has been prepared to satisfy the requirements of Remedial Action Contract Number N62472-03-D-0802, Contract Task Order 005, the Resource Conservation and Recovery Act (RCRA), and Section 7:26-2A.9 of the New Jersey Final Regulations.

This groundwater sampling report summarizes the data collected during the sample collection activities in July 2004 and also the laboratory data from the samples.

1.1 *Site Description*

NWS Earle is located in Monmouth County, New Jersey, approximately 47 miles south of New York City. NWS Earle consists of a 10,248-acre Mainside Area located in the Colts Neck Township approximately 10 miles inland from the Atlantic Ocean at Sandy Hook, and a 706-acre Waterfront Area. The two areas are connected via a Navy-controlled right-of-way. Sites 3 and 10 are both located on the Mainside Area within Operable Unit 6 (OU-6). OU-6 consists of two former landfills located in the Mainside Area; the landfill southwest of "F" group (Site 3) and the scrap metal landfill (Site 10). Site 3 is located in Howell Township, and Site 10 is located in Colts Neck Township. The OU-6 sites were grouped together based on similarities of potential for contaminants to migrate to human and/or environmental receptors.

Site 3 is a 5-acre site located southwest of "F" group that was used from 1960 to 1968 for the disposal of domestic and industrial wastes. Industrial wastes reportedly disposed of at Site 3 consisted of paints and paint thinners, solvents, varnishes, shellac, acids, alcohols, caustics, pesticide containers and rinse water, wood, and small amounts of asbestos.

Site 10 is a scrap metal landfill that covers 2 acres and was used from 1953 to 1965 for the disposal of demilitarized munitions and spent munitions cases. There is no known evidence that any live ammunition is buried at the site. Only certified-inert materials were reported to have been disposed there. An estimated 65,000 cubic yards, which includes cover material, were disposed at the site. The disposed material consisted primarily of aluminum and steel containers. Spent grit and paint chips from the ammunition rework operations were also buried.

In 1990, NWS Earle was placed on the National Priorities List (NPL). The nature and extent of the contamination at Sites 3 and 10 was addressed by the Phase II Remedial Investigation (RI) in 1995. The RI was completed in July 1996 and was used as the basis for performing a Feasibility Study (FS) of potential remedial alternatives. The Navy,

USEPA and NJDEP developed the proposed remedial action plan from the findings of the FS and signed a Record of Decision (ROD) in July 2001. The major components of the proposed remedial action plan include:

1. Re-grading and addition of cover materials.
2. Passive gas venting system to manage landfill gas migration and build-up under cap (Site 10 only).
3. Surface controls to minimize erosion and manage runoff.
4. Upland revegetation.
5. Establish a Classification Exemption Area (CEA) adjacent to the landfills to bar the use of groundwater during the remediation period.
6. Provide long-term periodic groundwater monitoring.

Site 3 was completed in 2003. The final cover system includes six inches of top soil overlying 30 inches of compacted cover soil material. Storm water management measures, including culverts, drainage structures and a vegetative cover were also installed.

Site 10 was also completed in 2003. The final cover system includes a layer of top soil overlying a drainage layer and a geomembrane barrier layer. A gas management layer is also included in the system to prevent the accumulation of gas below the barrier layer.

As part of the long-term groundwater monitoring, ECOR prepared this Groundwater Sampling Report presenting the results of the 2004 annual groundwater sampling event.

2.0 GROUNDWATER MONITORING

The purpose of the groundwater monitoring program is to monitor the effect that the landfill caps at Sites 3 and 10 have on improving groundwater quality around the two sites during the post-closure care period. Groundwater samples were collected from the twelve monitoring wells at Site 3 and the four monitoring wells at Site 10. Monitoring well locations are depicted on Figures 1 and 2. The sampling and analyses performed as part of the groundwater investigation followed procedures outlined in the Operations and Maintenance Manual prepared for the Site (Foster Wheeler, 2003). Three well volumes were purged from each well using a peristaltic pump prior to sample collection. Groundwater samples were collected directly from the effluent of the pump, with the flow rate adjusted to approximately 0.5 liters/minute. Groundwater was analyzed in the field for pH, conductivity, temperature, ORP, DO, and turbidity. Samples were analyzed for total and dissolved metals via USEPA SW-846 Method 6010A.

2.1 Groundwater Sampling

ECOR conducted groundwater sampling on 27-28 July 2004. Prior to initiating the sampling activities, groundwater levels were measured at each monitoring well. The

depth to the bottom of the casing was also measured at this time. The depth to water and depth to bottom were used to determine the purge volume prior to sample collection. Prior to sampling, each monitoring well was purged of three well volumes to ensure that representative groundwater samples were obtained. Purge water was discharged to the ground surface.

Groundwater samples were obtained from monitoring well MW03-01 through monitoring well MW03-08, monitoring well MW03-10 through monitoring well MW03-12, MW10-02, MW10-04, MW10-06 and MW10-07. MW03-09 was not sampled due to an insufficient volume of groundwater present (0.57 ft).

Samples from Site 3 were analyzed for total and dissolved aluminum, antimony, arsenic, cadmium and iron. Groundwater samples from Site 10 were analyzed for total and dissolved aluminum, iron and manganese.

2.2 *Groundwater Gauging*

Groundwater elevations were measured at the twelve monitoring wells at Site 3 and the four monitoring wells at Site 10 on 27-28 July 2004 using an oil/water interface probe. The groundwater elevation data for this gauging event has been summarized in Table 1. In addition, groundwater contour maps for the Site 3 and Site 10 July gauging event have been provided as Figures 3 and 4, respectively.

The groundwater flow direction at Site 3 during the July 2004 sampling event has been determined to be in a southeasterly direction at an average hydraulic gradient of 0.222 feet/foot, as determined between monitoring well MW03-06 and monitoring well MW03-08. The groundwater contours follow the contours of the cap elevation. The groundwater at Site 10 was found to be flowing to the south/southeast at average hydraulic gradient of 0.008 feet/foot, as determined between monitoring well MW10-02 and monitoring well MW10-07. Overall there has been a slight decrease in groundwater elevations in monitoring wells at both Site 3 (approximately 1- 8 feet) and Site 10 (approximately 1-2 feet). A comparison with the previous groundwater elevations can be found in Table 2.

3.0 ANALYTICAL RESULTS

A summary of the analytical results for the July 2004 sampling event at Sites 3 and 10 is included as Tables 3 and 4, respectively. Historical groundwater analytical results are provided as Tables 5 and 6, respectively. The laboratory analytical data packages for this sampling event are included as Attachment A.

3.1 Site 3

Exceedances of the New Jersey Department of Environmental Protection (NJDEP) Groundwater Quality Standards (GWQS) were detected in all of the groundwater sample locations from Site 3. Iron exceedances were detected in all of the groundwater samples from Site 3 with the exception of the filtered sample collected from monitoring well MW03-05 and the filtered sample collected from monitoring well MW03-11. Antimony and arsenic were detected at monitoring well MW03-08 at concentrations above GWQS. Antimony was detected at concentrations below the GWQS at monitoring well MW03-04. Cadmium was present above the GWQS in the filtered and unfiltered samples collected from monitoring wells MW03-01, MW03-04, MW03-05, MW03-11, and the unfiltered sample for monitoring well MW03-08. Cadmium was found at a concentration below the GWQS in the filtered sample at monitoring well MW03-08. Aluminum was detected at concentrations above GWQS at all sample locations with the exception of the samples collected from monitoring wells MW03-04 and MW03-06.

3.2 Site 10

All of the sample locations from Site 10 had detections above GWQS. Iron was detected in all of the filtered and unfiltered groundwater samples at concentrations above the GWQS with the exception of filtered samples from monitoring wells MW10-02, MW10-04, and the duplicate of MW10-04 (DUP01). Aluminum exceedances were detected in all of the filtered and unfiltered groundwater samples from Site 10. Manganese was detected at monitoring well MW10-02 at a concentration above GWQS.

4.0 SUMMARY AND CONCLUSIONS

The results of the groundwater sampling performed in July 2004 indicate that at least one target analyte was detected at each monitoring well above the GWQS. Significant concentrations of iron were observed at monitoring wells MW03-04 and MW03-08. Monitoring wells MW03-04 and MW03-08 are located on the downgradient (southeastern) area of Site 3.

Generally, concentrations of target compounds increased at Site 3 since the previous sampling event (July 2003). At Site 10, concentrations of target compounds have decreased since the July 2003 sampling event. Historical data is limited for both sites; therefore it is difficult to determine a concentration trend until additional data is collected.

Based on the results of sampling and the conclusions presented above, continued long-term monitoring at Sites 3 and 10 is recommended.

TABLES

Table 1
 NWS Earle - Sites 3 and 10
 Groundwater Elevation Data
 July 2004

Site 3 Well ID	Casing Elevation (Feet Above MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet Above MSL)	Measured Well Depth (Feet)
MW03-01	116.51	8.03	108.48	20.57
MW03-02	125.03	20.45	104.58	25.95
MW03-03	124.53	10.57	113.96	24.62
MW03-04	130.75	20.78	109.97	24.42
MW03-05	125.09	16.60	108.49	23.50
MW03-06	127.68	13.91	113.77	22.55
MW03-07	133.91	21.35	112.56	30.20
MW03-08	118.30	19.68	98.62	21.95
MW03-09	122.54	25.83	96.71	26.40
MW03-10	122.84	20.96	101.88	26.75
MW03-11	124.68	25.57	99.11	28.02
MW03-12	119.84	27.11	92.73	30.07

Site 10 Well ID	Casing Elevation (Feet Above MSL)	Depth To Water (Feet)	Groundwater Elevation (Feet Above MSL)	Measured Well Depth (Feet)
MW10-02	115.17	15.92	99.25	28.80
MW10-04	112.95	12.54	100.41	22.31
MW10-06	106.52	5.16	101.36	19.30
MW10-07	108.01	7.70	100.31	22.82

MSL = Mean Sea Level

Casing Elevation values are from Boucher and James Consulting Engineers survey June 2003.

Reported Well Depth values are from survey of Site after capping activities.

Measured Well Depth obtained during gauging activities in July, 2004.

Table 2
NWS Earle
Comparison of Water Level Measurements

Site 3 Well ID	Groundwater Elevation July 2003 (Feet Above MSL)	Groundwater Elevation July 2004 (Feet Above MSL)
MW03-01	111.08	108.48
MW03-02	109.37	104.58
MW03-03	115.12	113.96
MW03-04	114.15	109.97
MW03-05	111.28	108.49
MW03-06	115.66	113.77
MW03-07	114.81	112.56
MW03-08	106.89	98.62
MW03-09	99.78	96.71
MW03-10	111.26	101.88
MW03-11	102.32	99.11
MW03-12	93.58	92.73

Site 10 Well ID	Groundwater Elevation July 2003 (Feet Above MSL)	Groundwater Elevation July 2004 (Feet Above MSL)
MW10-02	101.19	99.25
MW10-04	102.78	100.41
MW10-06	101.19	101.36
MW10-07	101.86	100.31

Table 3
NWS Earle - Site 3
Analytical Results
July 2004 Sampling Event

Sample ID	Date	Contaminant Concentration (µg/L)				
		Aluminum GWQS=200	Antimony GWQS=20	Arsenic GWQS=8	Cadmium GWQS=4	Iron GWQS=300
MW3-01-04-02	7/27/2004	2,030	6.9 U	4.6 U	21.2	23,000
MW3-01-04-02F	7/27/2004	1,780	6.9 U	4.6 U	18.7	18,900
MW3-02-04-02	7/28/2004	2,080	6.9 U	4.6 U	1.1 U	862
MW3-02-04-02F	7/28/2004	2,180	6.9 U	4.6 U	1.1 U	510
MW3-03-04-02	7/27/2004	755	6.9 U	4.6 U	1.1 U	5,150
MW3-03-04-02F	7/27/2004	740	6.9 U	4.6 U	1.1 U	5,070
MW3-04-04-02	7/28/2004	134 J	7.7	4.6 U	5.9	180,000
MW3-04-04-02F	7/28/2004	34.4 U	8.6	4.6 U	4.4	162,000
MW3-05-04-02	7/28/2004	870	6.9 U	4.6 U	115	1,740
MW3-05-04-02F	7/28/2004	638	6.9 U	4.6 U	117	240
MW3-06-04-02	7/28/2004	46.1 J	6.9 U	4.6 U	1.1 U	683
MW3-06-04-02F	7/28/2004	34.4 U	6.9 U	4.6 U	1.1 U	619
MW3-07-04-02	7/28/2004	2,900	6.9 U	4.6 U	1.1 U	4,450
MW3-07-04-02F	7/28/2004	2,540	6.9 U	4.6 U	1.1 U	1,540
MW3-08-04-02	7/28/2004	30,200	37.7	766	22.0	793,000
MW3-08-04-02F	7/28/2004	6,940	6.9 U	4.6 U	1.3	8,010
MW3-10-04-02	7/27/2004	454	6.9 U	4.6 U	1.1 U	3,610
MW3-10-04-02F	7/27/2004	249 J	6.9 U	4.6 U	1.1 U	337
MW3-11-04-02	7/28/2004	495	6.9 U	4.6 U	4.4	78.3 J
MW3-11-04-02F	7/28/2004	447	6.9 U	4.6 U	4.3	54.0 U
MW3-12-04-02	7/28/2004	2,430	6.9 U	4.6 U	1.1 U	8,140
MW3-12-04-02F	7/28/2004	2,460	6.9 U	4.6 U	1.1 U	8,260
NWSE3-GW-DUP02-02*	7/28/2004	2,730	6.9 U	4.6 U	1.1 U	3,540
NWSE3-GW-DUP02-02F**	7/28/2004	2,660	6.9 U	4.6 U	1.1 U	1,550

* Duplicate of MW3-07-04-02

**Duplicate of MW3-07-04-02F

Definitions:

J = Estimated value

U = Compound analyzed for but not detected at the state detection limit

GWQS = NJDEP Groundwater Quality Standards

F = Sample was filtered prior to analysis

Water Quality Standards:

1.) Ground Water Quality Criteria is from the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Criteria for Class II-A Ground Water (N.J.A.C 7:9-6). Unless otherwise noted, the criteria used are the Higher of the Practical Quantitation Levels (PQLs) and Ground Water Quality Criteria.

2.) Analytes with concentrations greater than the NJDEP Groundwater Quality Criteria are highlighted in bold.

Table 4
 NWS Earle - Site 10
 Analytical Results
 July 2004 Sampling Event

Sample ID	Date	Contaminant Concentration (µg/L)		
		Aluminum GWQS=200	Iron GWQS=300	Manganese GWQS=50
MW10-02-04-02	7/27/2004	5,040	410	88.2
MW10-02-04-02F	7/27/2004	4,740	54.0 U	82.3
MW10-04-04-02	7/27/2004	1,210	1,460	8.9 J
MW10-04-04-02F	7/27/2004	1,110	54.0 U	8.5
MW10-06-04-02	7/27/2004	992	1,110	11.9
MW10-06-04-02F	7/27/2004	886	813	11.8
MW10-07-04-02	7/27/2004	5,760	8,900	14.7
MW10-07-04-02F	7/27/2004	1,510	616	13.3
NWSE10-GW-DUP01-02	7/27/2004	1,310	2,660	8.7 J
NWSE10-GW-DUP01-02F	7/27/2004	1,100	54.0 U	8.3

* Duplicate of MW10-04-04-02

**Duplicate of MW10-04-04-02F

Definitions:

J = Estimated value

U = Compound analyzed for but not detected at the state detection limit

GWQS = NJDEP Groundwater Quality Standards

F = Sample was filtered prior to analysis

Water Quality Standards:

- 1.) Ground Water Quality Criteria is from the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Criteria for Class II-A Ground Water (N.J.A.C 7:9-6). Unless otherwise noted, the criteria used are the Higher of the Practical Quantitation Levels (PQLs) and Ground Water Quality Criteria.
- 2.) Analytes with concentrations greater than the NJDEP Groundwater Quality Criteria are highlighted in bold.

Table 5
NWS Earle - Site 3
Historical Groundwater Analytical Results

Contaminant Concentration (µg/L)	Date	MW03-01		MW03-02		MW03-03		MW03-04		MW03-05		MW03-06	
		Total	Dissolved										
Aluminum GWQS=200	July-95	7,930	5,520	NA	NA	448	152	NA	NA	268	NA	498	NA
	July-03	1,440	1,390	436	294	1,180	1,050	302	118 B	237	134	898	59.0 B
	July-04	2,030	1,780	2,080	2,180	755	740	134 J	34.4 U	870	638	46.1 J	34.4 U
Antimony GWQS=20	July-95	2.7 U	6.1	NA	NA	2.7 U	11	NA	NA	2.7 U	NA	2.7 U	NA
	July-03	3.8 B	3.8 U	4.6 B	3.8 U	3.8 U	3.8 U	8.3 B	9.96 B	3.8 U	3.8 U	3.9 U	3.8 U
	July-04	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	7.7	8.6	6.9 U	6.9 U	6.9 U	6.9 U
Arsenic GWQS=8	July-95	15.1	4.5	NA	NA	3.3 U	3.3 U	NA	NA	3.3 U	NA	3.3 U	NA
	July-03	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U	4.4 B	2.4 U	2.4 U	2.4 U	2.4 U	2.4 U
	July-04	4.6 U	4.6 U	4.6	4.6 U	4.6 U	4.6 U						
Cadmium GWQS=4	July-95	11.7	12.3	NA	NA	2.3	2.2	NA	NA	6.5	NA	0.38 U	NA
	July-03	3.6 B	3.6 B	0.30 U	0.30 U	0.82 B	0.81 B	0.30 B	0.30 B	280	265	0.30 U	0.30 U
	July-04	21.2	18.7	1.1 U	1.1 U	1.1 U	1.1 U	5.9	4.4	115	117	1.1 U	1.1 U
Iron GWQS=300	July-95	26,000	2,670	NA	NA	988	433	NA	NA	930	NA	440	NA
	July-03	2,920	1,140	3,480	1,140	2,470	388	168,000	175,000	1,190	66.9 B	1,140	65.8 B
	July-04	23,000	18,900	862	510	5,150	5,070	180,000	162,000	1,740	240	683	619

Contaminant Concentration (µg/L)	Date	MW03-07		MW03-08		MW03-09		MW03-10		MW03-11		MW03-12	
		Total	Dissolved										
Aluminum GWQS=200	July-95	NA	NA										
	July-03	2,260	1,970	5,030	4,120	5,760	864	465	425	835	643	15,600	12,100
	July-04	2,900	2,540	30,200	6,940	NA	NA	454	249 J	495	447	2,430	2,460
Antimony GWQS=20	July-95	NA	NA										
	July-03	4.2 B	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	4.4 B	4.5 B	3.8 B	3.8 U	3.8 U
	July-04	6.9 U	6.9 U	37.7	6.9 U	NA	NA	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U
Arsenic GWQS=8	July-95	NA	NA										
	July-03	2.4 U	2.4 U	50.6	3.4 B	7.3 B	2.4 U	2.4 U	2.4 U	2.6 U	2.4 U	5.1 B	3.4 B
	July-04	4.6 U	4.6 U	766	4.6 U	NA	NA	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U
Cadmium GWQS=4	July-95	NA	NA										
	July-03	0.70 U	0.48 U	0.30 U	1.30 B	0.43 B	0.84 B	0.30 U	0.30 U	3.4 B	3.3 B	0.30 U	0.3 U
	July-04	1.1 U	1.1 U	22	1.3	NA	NA	1.1 U	1.1 U	4.4	4.3	1.1 U	1.1 U
Iron GWQS=300	July-95	NA	NA										
	July-03	1,030	651	29,200	1,520	15,500	591	1,370	67.5	1,170	158	19,800	16,000
	July-04	4,450	1,540	793,000	8,010	NA	NA	3,610	337	78.3 J	54.0 U	8,140	8,260

Definitions:

J = Estimated value
 U = Compound analyzed for but not detected at the state detection limit
 GWQS = NJDEP Groundwater Quality Standards
 F = Sample was filtered prior to analysis
 NA = Data not available

Water Quality Standards:

1.) Ground Water Quality Criteria is from the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Criteria for Class II-A Ground Water (N.J.A.C 7:9-6). Unless otherwise noted, the criteria used are the Higher of the Practical Quantitation Levels (PQLs) and Ground Water Quality Criteria.
 2.) Analytes with concentrations greater than the NJDEP Groundwater Quality Criteria are highlighted in bold.

Table 6
NWS Earle - Site 10
Historical Groundwater Analytical Results

Contaminant Concentration (µg/L)	Date	MW10-02		MW10-04		MW10-06		MW10-07	
		Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved
Aluminum GWQS=200	July-95	1,890	NA	1,160	NA	1,720	NA	5,820	NA
	July-03	3,160	3,320	2,460	1,670	1,390	768	41,200	277
	July-04	5,040	4,740	1,210	1,110	992	886	5,760	1,510
Iron GWQS=300	July-95	279	NA	451	NA	3,740	NA	1,200	NA
	July-03	346	18.0 B	3,430	184	3,860	3,360	33,300	242
	July-04	410	54.0 U	1,460	54.0 U	1,110	813	8,900	616
Manganese GWQS=50	July-95	32	NA	13	NA	23.9	NA	43.0	NA
	July-03	33.9	36.2	9.2 B	9.5 B	30.6	35.9	42.0	16.3
	July-04	88.2	82.3	8.9 J	8.5	11.9	11.8	14.7	13.3

Definitions:

J = Estimated value

U = Compound analyzed for but not detected at the state detection limit

GWQS = NJDEP Groundwater Quality Standards

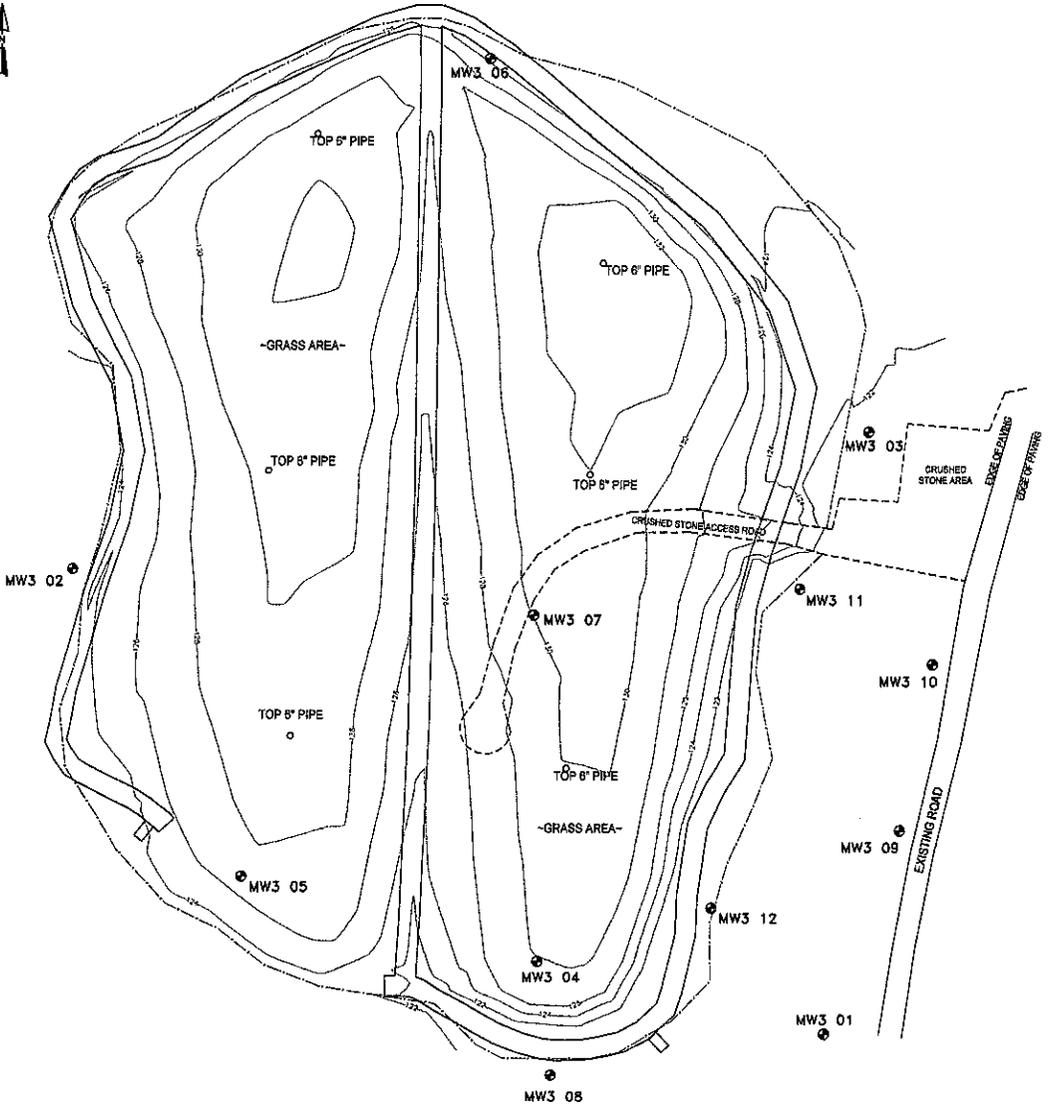
F = Sample was filtered prior to analysis

NA = Data not available

Water Quality Standards:

- 1.) Ground Water Quality Criteria is from the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Criteria for Class II-A Ground Water (N.J.A.C 7:9-6). Unless otherwise noted, the criteria used are the Higher of the Practical Quantitation Levels (PQLs) and Ground Water Quality Criteria.
- 2.) Analytes with concentrations greater than the NJDEP Groundwater Quality Criteria are highlighted in bold.

FIGURES



LEGEND

-  EXISTING MONITORING WELL
-  FENCE

GENERALIZED SITE PLAN

LANDFILL CAP SITE 3
 U.S. NAVY NWS- EARLE
 COLTS NECK, NJ

ECOR Solutions
 508 Brandywine Parkway, West Chester, PA 19380

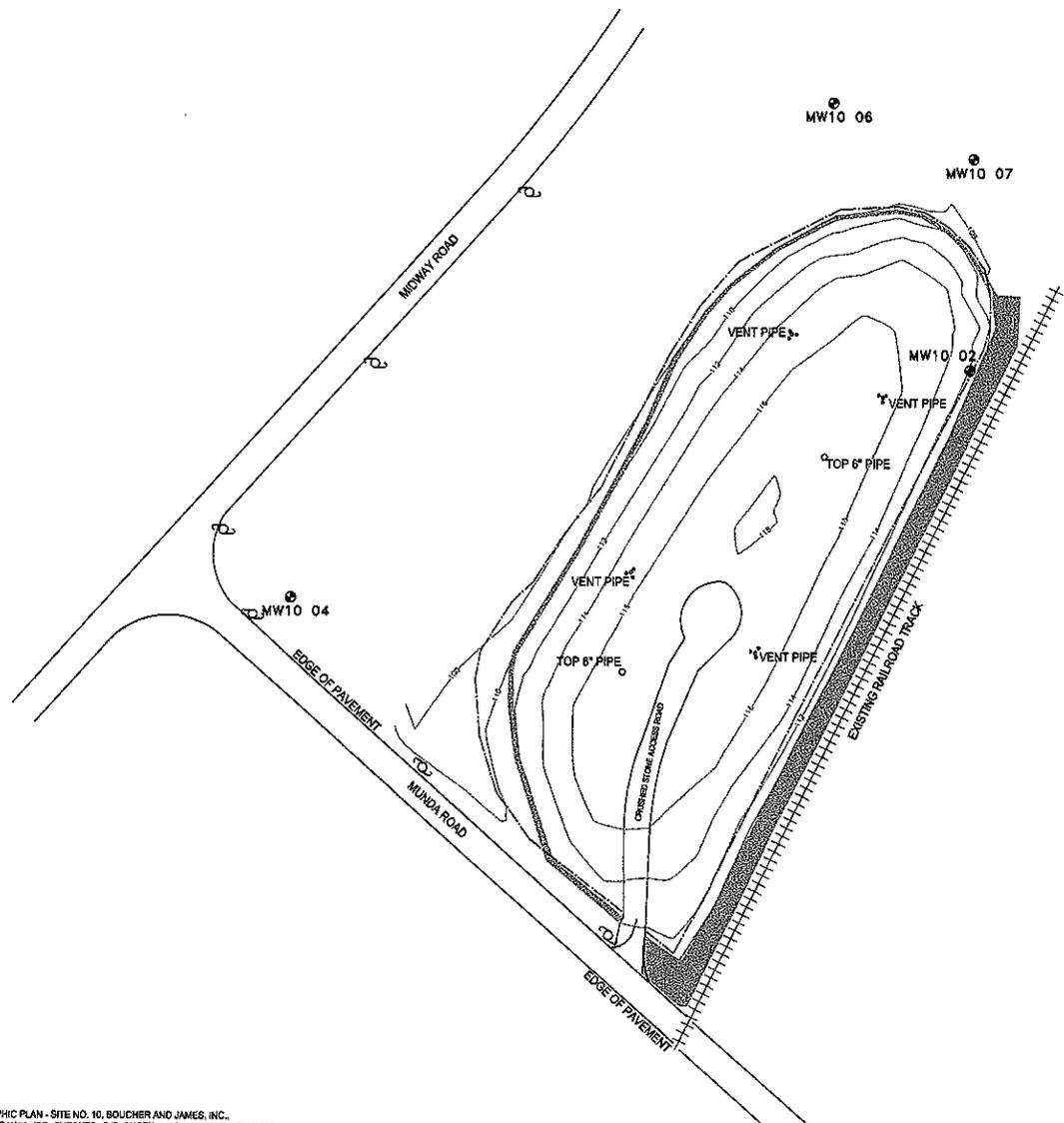
SCALE IN FEET


DATE
 12-07-04

FIGURE
 1



SOURCE: TOPOGRAPHIC PLAN - SITE NO. 3, BOUCHER AND JAMES, INC., DOYLESTOWN, PA. DRAWN: JFD, CHECKED: CJB, SHEET: 1 OF 1, DATE: JUNE 22, 2001.

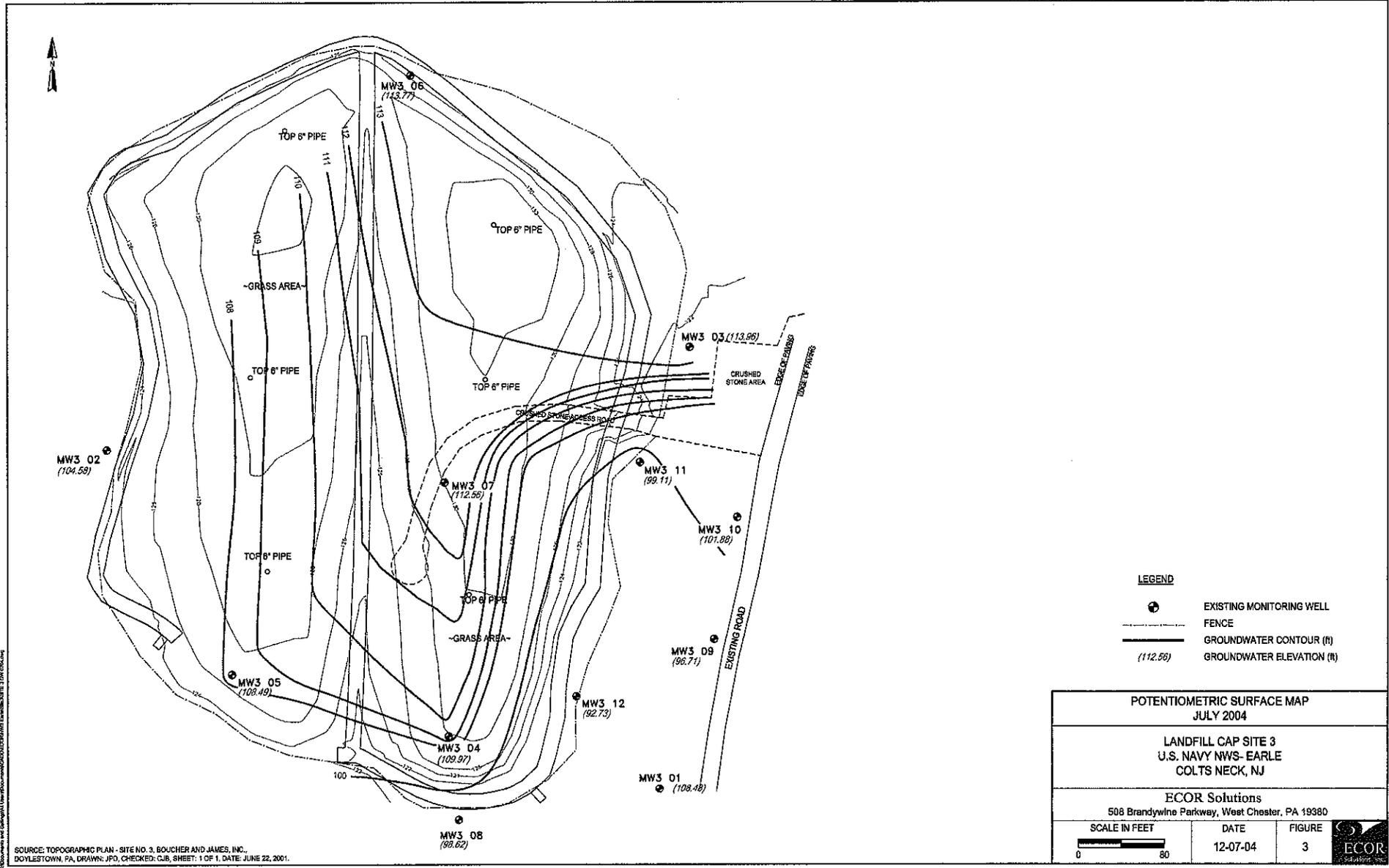


LEGEND

- EXISTING MONITORING WELL
- RAILROAD TRACKS
- RIPRAP APRON
- UTILITY POLE

GENERALIZED SITE PLAN		
LANDFILL CAP SITE 10 U.S. NAVY NWS- EARLE COLTS NECK, NJ		
ECOR Solutions 508 Brandywine Parkway, West Chester, PA 19380		
SCALE IN FEET 	DATE 12-12-04	FIGURE 2

SOURCE: TOPOGRAPHIC PLAN - SITE NO. 10, BOUCHER AND JAMES, INC., DOYLESTOWN, PA, DRAWN: JPD, CHECKED: GJB, SHEET: 1 OF 1, DATE: JUNE 22, 2001.

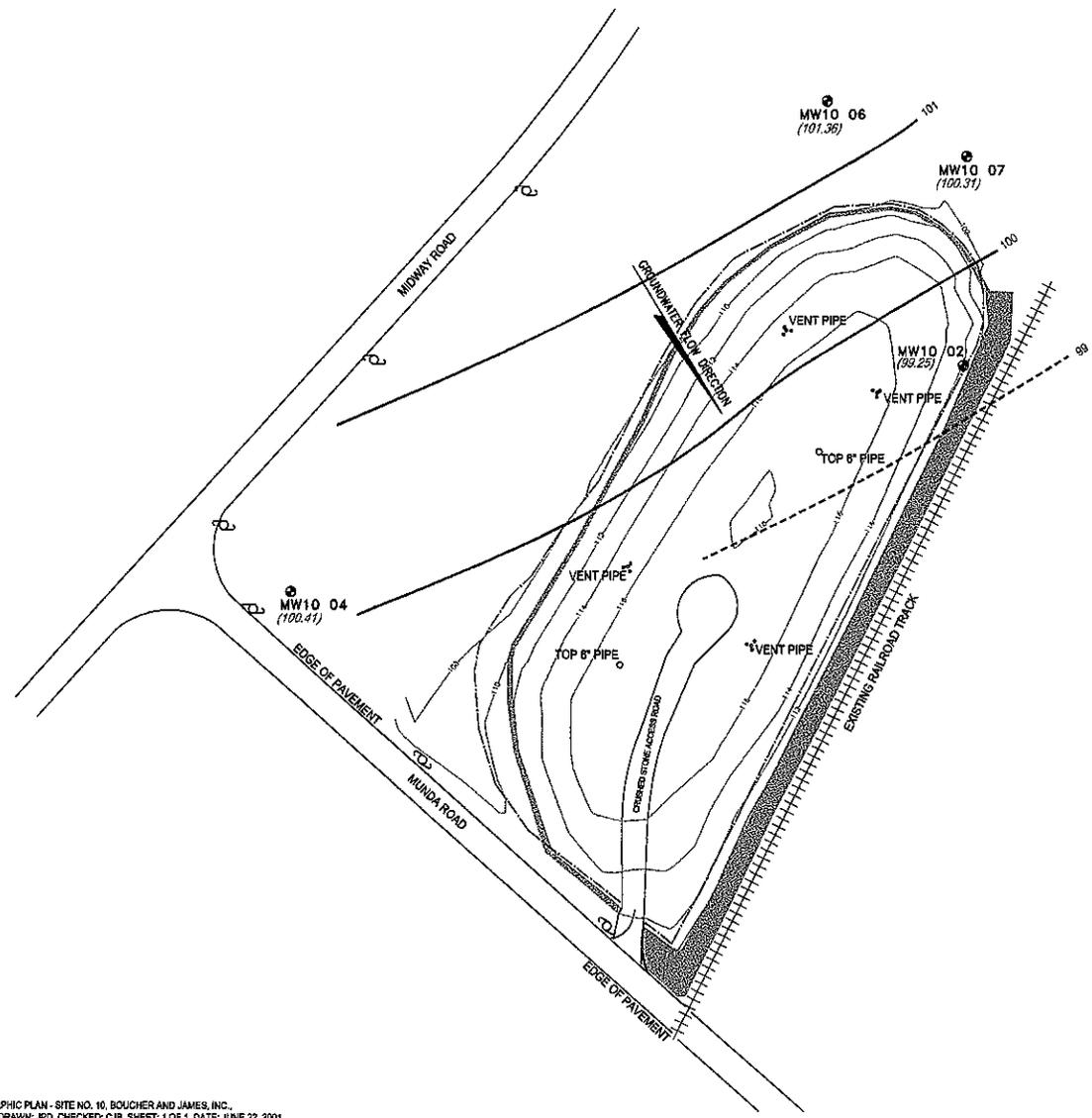


SOURCE: TOPOGRAPHIC PLAN - SITE NO. 3, BOUCHER AND JAMES, INC., DOYLESTOWN, PA, DRAWN: JFD, CHECKED: CJB, SHEET: 1 OF 1, DATE: JUNE 22, 2001.

LEGEND

- EXISTING MONITORING WELL
- FENCE
- GROUNDWATER CONTOUR (ft)
- GROUNDWATER ELEVATION (ft)

POTENTIOMETRIC SURFACE MAP JULY 2004		
LANDFILL CAP SITE 3 U.S. NAVY NWS- EARLE COLTS NECK, NJ		
ECOR Solutions 508 Brandywine Parkway, West Chester, PA 19380		
SCALE IN FEET 	DATE 12-07-04	FIGURE 3



- LEGEND**
- EXISTING MONITORING WELL
 - RAILROAD TRACKS
 - RIPRAP APRON
 - UTILITY POLE
 - GROUNDWATER CONTOUR (ft)
 - INFERRED GROUNDWATER CONTOUR (ft)
 - (99.25) GROUNDWATER ELEVATION (ft)

POTENTIOMETRIC SURFACE MAP JULY 2004		
LANDFILL CAP SITE 10 U.S. NAVY NWS- EARLE COLTS NECK, NJ		
ECOR Solutions 508 Brandywine Parkway, West Chester, PA 19380		
SCALE IN FEET 	DATE 12-12-04	FIGURE 4

SOURCE: TOPOGRAPHIC PLAN - SITE NO. 10, BOUCHER AND JAMES, INC., DOYLESTOWN, PA, DRAWN: JFD, CHECKED: CJB, SHEET: 1 OF 1, DATE: JUNE 22, 2001.

C:\Documents and Settings\jfd\My Documents\ECOR\2004\12\12-12-04\1001\1001.dwg

ATTACHMENT A

**DATA VALIDATION REVIEW
EARLE NAVAL WEAPONS STATION
SITES 3 AND 10
ENVIRONMENTAL RESOURCES MANAGEMENT (ERM)
PROJECT NUMBER 0022315 PHASE 2
SEVERN TRENT LABORATORIES (STL), COLCHESTER, VERMONT
CASE NUMBER 24000
SAMPLE DELIVERY GROUP (SDG) EAS3N10**

Deliverables

The above referenced data summary package and sample data package for thirty (30) aqueous samples and four (4) blind field duplicate samples contains all required deliverables as stipulated under the 2000 New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) Superfund Category. The sample specific analysis performed included Metals analysis in accordance with USEPA SW-846 Method 6010A. The samples collected at Site 3 were analyzed for the following five (5) project specific metals: aluminum, antimony, arsenic, cadmium, and iron, while the samples collected at Site 10 were analyzed for the following three (3) project specific metals: aluminum, iron, and manganese. All methods follow "Test Methods for Evaluation Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions." The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the ASP, the United States Environmental Protection Agency (USEPA) Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (July 2002), the USEPA Region II Data Review Standard Operating Procedure (SOP) Number HW-2, Revision 11, January 1992: Evaluation of Metals Data for the CLP Program and the reviewer's professional judgment.

This report pertains to the following samples collected on 27 and 28 July 2004:

Samples

NWSE3-MW3-01-04-02	NWSE3-MW3-06-04-02	NWSE3-MW3-12-04-02
NWSE3-MW3-01-04-02F	NWSE3-MW3-06-04-02F	NWSE3-MW3-12-04-02F
NWSE3-MW3-02-04-02	NWSE3-MW3-07-04-02	NWSE10-MW10-02-04-02
NWSE3-MW3-02-04-02F	NWSE3-MW3-07-04-02F	NWSE10-MW10-02-04-02F
NWSE3-MW3-03-04-02	NWSE3-MW3-08-04-02	NWSE10-MW10-04-04-02
NWSE3-MW3-03-04-02F	NWSE3-MW3-08-04-02F	NWSE10-MW10-04-04-02F
NWSE3-MW3-04-04-02	NWSE3-MW3-10-04-02	NWSE10-MW10-06-04-02
NWSE3-MW3-04-04-02F	NWSE3-MW3-10-04-02F	NWSE10-MW10-06-04-02F
NWSE3-MW3-05-04-02	NWSE3-MW3-11-04-02	NWSE10-MW10-07-04-02
NWSE3-MW3-05-04-02F	NWSE3-MW3-11-04-02F	NWSE10-MW10-07-04-02F

QC Samples

NWSE3-GW-DUP02-02 (blind field duplicate of NWSE3-MW3-07-04-02)
NWSE3-GW-DUP02-02F (blind field duplicate of NWSE3-MW3-07-04-02F)
NWSE10-GW-DUP01-02 (blind field duplicate of NWSE10-MW10-04-04-02)
NWSE10-GW-DUP01-02F (blind field duplicate of NWSE10-MW10-04-04-02F)

Note: The laboratory has appended an "F" to the client sample identifications to denote samples that were field filtered aliquots submitted for dissolved metals analysis.

Chains-of-Custody

- The Chains-of-Custody (COCs) were reviewed for completeness and accuracy. All samples and all test requests on the COC have been performed by the laboratory. No discrepancies were observed.

Inorganics

The following items/criteria were reviewed:

- Case narrative and deliverable requirements
- Chain-of-Custody (COC)
- Holding times and sample preservation
- Detection limits
- Inorganic analysis data sheets (Form I)
- Initial and continuing calibration verifications
- Contract Required Detection Limit (CRDL) standard analysis
- Lab Blank data
- ICP Interference Check Sample (ICS) analysis
- Laboratory Control Sample (LCS) results
- ICP Serial Dilution analysis
- Blind Field Duplicate Analysis

The items listed above were technically and contractually in compliance with USEPA SW-846 and NYSDEC ASP protocols with exceptions discussed in the text below. The data have been validated according to the procedures outlined above and qualified accordingly.

Metals

- CRDL standard recoveries were above the 80% - 120% USEPA Region II QC limits for aluminum (137.1%) and iron (128.9%). Recoveries greater than 120% may indicate potential high bias in positive sample results at concentrations near the CRDL.

Positive concentrations only for aluminum and iron in all samples should be considered estimated and flagged "J" at concentrations less than or equal to two times that metal's CRDL.

- No samples in this data deliverable were specified for Matrix Spike/Matrix Duplicate (MS/MD) analysis and the laboratory did not supply the batch QC. All recoveries were within QC limits for the LCS. No qualification of the sample data is required.
- The following table lists samples and blind field duplicate pairs containing positively identified target compounds with concentrations differing by more than the 50%D QC criteria indicating poor precision. As a result, the concentrations of the listed compounds in each sample are considered estimated and flagged "J".

Sample/Field Duplicate	Compound
NWSE10-MW10-04-04-02 & NWSE10-GW-DUP01-02	iron

- The laboratory has noted on the sample log-in sheet (Form DC-1; page 162) that the sample containers for samples NWSE3-MW3-04-04-02 and NWSE3-MW3-04-04-02F may have been switched since the sample labeled "Dissolved" did not appear to be filtered while the sample container containing preservative was clear. After a review of the results the reviewer can not draw the same conclusion and has decided that no qualification of the sample data is required.

Package Summary:

All data are valid and usable with qualifications as noted in this review.

Signed:


Andrew J. Coenen
Project Scientist

Dated: 12 October 2004

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-01-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580713
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2030			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	21.2			P
7439-89-6	Iron	23000			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-01-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580714
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1780			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	18.7			P
7439-89-6	Iron	18900			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-02-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580746
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2080			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	862			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-02-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580747
 Level (low/mad): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2180			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	510			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-03-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580709
 Level (low/med): LOW Date Received: 7/30/2004
 * Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	755			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	5150			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-03-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580710
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	740			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	5070			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-04-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580740
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	134	B	<u>5</u>	P
7440-36-0	Antimony	7.7	B		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	5.9			P
7439-89-6	Iron	180000			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: yellow Clarity After: cloudy Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-04-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580741
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	34.4	U		P
7440-36-0	Antimony	8.6	E		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	4.4	E		P
7439-89-6	Iron	162000			P

Color Before: orange Clarity Before: cloudy Texture: _____
 Color After: yellow Clarity After: cloudy Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-05-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580744
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	870			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	115			P
7439-89-6	Iron	1740			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-05-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580745
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	638			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	117			P
7439-89-6	Iron	240			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-06-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580748
 Level (low/med): LOW Date Received: 7/30/2004
 ‡ Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	46.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	P
7440-36-0	Antimony	6.9	<input type="checkbox"/>	<input type="checkbox"/>	P
7440-38-2	Arsenic	4.6	<input type="checkbox"/>	<input type="checkbox"/>	P
7440-43-9	Cadmium	1.1	<input type="checkbox"/>	<input type="checkbox"/>	P
7439-89-6	Iron	683	<input type="checkbox"/>	<input type="checkbox"/>	P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-06-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580749
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	34.4	U		P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	619			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-07-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580738
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2900			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	4450			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments:

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-GW-DUP02-02

Lab Name: STL BURLINGTON

Contract: 24000

Lab Code: STLVT

Case No.: 24000

SAS No.: _____

SDG No.: EAS3N10

Matrix (soil/water): WATER

Lab Sample ID: 580752

Level (low/med): LOW

Date Received: 7/30/2004

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2730			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	3540			P

Color Before: colorless

Clarity Before: clear

Texture: _____

Color After: colorless

Clarity After: clear

Artifacts: _____

Comments:

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-07-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580739
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2540			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	1540			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-GW-DUP02-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580753
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2660			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	1550			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-08-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580742
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30200			P
7440-36-0	Antimony	37.7	<input checked="" type="checkbox"/>		P
7440-38-2	Arsenic	766			P
7440-43-9	Cadmium	22.0			P
7439-89-6	Iron	793000			P

Color Before: brown Clarity Before: cloudy Texture: _____
 Color After: yellow Clarity After: cloudy Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-08-04-02 F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580743
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6940			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.3	X		P
7439-89-6	Iron	8010			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-10-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580711
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	454			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	3610			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-10-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580712
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	249	5		P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	337			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-11-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580715
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	495			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	4.4	P		P
7439-89-6	Iron	78.3	P	J	P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-11-04-02F

Lab Name: STL BURLINGTON

Contract: 24000

Lab Code: STLVT

Case No.: 24000

SAS No.: _____

SDG No.: EAS3N10

Matrix (soil/water): WATER

Lab Sample ID: 580737

Level (low/med): LOW

Date Received: 7/30/2004

% Solids: 0.0

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

UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	447			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	4.3	P		P
7439-89-6	Iron	54.0	U		P

Color Before: colorless

Clarity Before: clear

Texture: _____

Color After: colorless

Clarity After: clear

Artifacts: _____

Comments:

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-12-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580750
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2430			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	8140			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE3-MW3-12-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580751
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2460			P
7440-36-0	Antimony	6.9	U		P
7440-38-2	Arsenic	4.6	U		P
7440-43-9	Cadmium	1.1	U		P
7439-89-6	Iron	8260			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-02-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580699
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5040			P
7439-89-6	Iron	410			P
7439-96-5	Manganese	88.2			P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-02-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: SELVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580700
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4740			P
7439-89-6	Iron	54.0	U		P
7439-96-5	Manganese	82.3			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-04-04-02

Lab Name: STL BURLINGTON Contract: 24000

Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10

Matrix (soil/water): WATER Lab Sample ID: 580705

Level (low/med): LOW Date Received: 7/30/2004

% Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1210			P
7439-89-6	Iron	1460	J		P
7439-96-5	Manganese	8.9	P		P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-GW-DUP01-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580707
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1310			P
7439-89-6	Iron	2660	J		P
7439-96-5	Manganese	8.7	J		P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-04-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580706
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1110			P
7439-89-6	Iron	54.0	U		P
7439-96-5	Manganese	8.5			P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments:

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-GW-DUP01-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580708
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1100			P
7439-89-6	Iron	54.0	U		P
7439-96-5	Manganese	8.3	E		P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-06-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVI Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580703
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	992			P
7439-89-6	Iron	1110			P
7439-96-5	Manganese	11.9	<input checked="" type="checkbox"/>		P

Color Before: colorless Clarity Before: clear Texture: _____
 Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-06-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580704
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	886			P
7439-89-6	Iron	813			P
7439-96-5	Manganese	11.8	P		P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-07-04-02

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580701
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5760			P
7439-89-6	Iron	8900			P
7439-96-5	Manganese	14.7	P		P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

USEPA-CLP FORMS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

NWSE10-MW10-07-04-02F

Lab Name: STL BURLINGTON Contract: 24000
 Lab Code: STLVT Case No.: 24000 SAS No.: _____ SDG No.: EAS3N10
 Matrix (soil/water): WATER Lab Sample ID: 580702
 Level (low/med): LOW Date Received: 7/30/2004
 % Solids: 0.0

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1510			P
7439-89-6	Iron	616			P
7439-96-5	Manganese	13.3	E		P

Color Before: colorless Clarity Before: clear Texture: _____

Color After: colorless Clarity After: clear Artifacts: _____

Comments: _____

