URS

September 24, 2004

Mr Ronnie Lee
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7015

Re. Former EMCA Site, Mamaroneck, New York
Results of July 2004 Groundwater Sampling and
Steps to Achieve a Record of Decision

Dear Mr Lee

Attached is the *Groundwater Sampling and Analysis Report for the July 2004 Sampling Event* at the Former EMCA Site Based on the results of this event, Rohm and Haas Company proposes to execute an Interim Remedial Measure (IRM) at the site that will consist of an additional injection of food-grade substrate The details of the proposed action will be presented in an IRM Work Plan for State review Because the injection conducted as a pilot study in 2003 was successful in stimulating significant anaerobic biological degradation of the site contaminants of concern, it is anticipated that the IRM will reduce the remaining site contaminants to relatively low levels

Based on our recent discussion, we agree that the IRM and preparation of a Record of Decision (ROD) for the site can proceed on parallel paths Therefore, we intend to provide the State with the necessary documentation to support the formulation of a ROD for the site The preferred remedy for the site, expected to be long-term monitoring, can then be executed immediately following ROD signing The documentation provided to the State will include a revised Engineering Analysis/Cost Estimate (EE/CA) that incorporates the results of the Pilot Study, a Remedial Action Work Plan that specifies locations, parameters, and frequency for long-term monitoring, and other information as requested by the State

A conceptual schedule for this course of action is presented below

Record of Decision		Interim Remedial Action	
Action	**Completion**	**Action**	**Completion**
Revised EE/CA to NYSDEC	October 29, 2004	Sampling Report to NYSDEC	September 24, 2004
RAWP to NYSDEC	October 29, 2004	IRM Work Plan to NYSDEC	September 30, 2004
NYSDEC prepares ROD	November 2004	IRM Injection	November 1, 2004
ROD executed	January 2005		
Monitoring per ROD initiated	Jan-Feb 2005		

Should you have any questions, please contact me at your convenience

Sincerely,

URS Corporation
Bruce J Przybyl
Project Manager

cc File 11172730 (C-1)
Dr Ronald Lantzy, Rohm & Haas
Mr Edward Tokarski, Rohm & Haas

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FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

GROUNDWATER SAMPLING AND ANALYSIS REPORT

Prepared for:

Rohm and Haas Company

Submitted by:

URS Corporation

September 2004

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1.0 INTRODUCTION

This report presents results of groundwater sampling and analysis conducted on July 22 and 23, 2004 at the Rohm and Haas former EMCA site located in Mamaroneck, New York (Figure 1). The sampling and analysis episode was performed to evaluate groundwater conditions approximately 1 year following a pilot study to evaluate the effectiveness of vegetable oil injection as a method to stimulate biological processes that result in the reductive dechlorination of 1,1,2-trichloro- 1,2,2- trifluoroethane (Freon 113; CAS No. 76-13-1) in site groundwater. The pilot study was performed in accordance with a March 2003 work plan (URS, 2003)[1].

2.0 GROUNDWATER SAMPLING AND ANALYSIS

Groundwater samples were collected using low flow purging and sampling procedures. Static groundwater level measurements were taken prior to purging and sampling. Field purging and sampling logs are presented in Appendix A.

Chain-of-custody was initiated immediately after the groundwater samples were collected and maintained through shipment to the laboratory. Laboratory analyses were performed for the following parameters:

Parameter	Analytical Method
Freon 113	USEPA CLP OLM 04.2
Freon 123a	USEPA CLP OLM 04.2
Freon 1113	USEPA CLP OLM 04.2
Methane	RSK-175
Chloride	SM 4500-C1-B
Sulfate	375.4
Sulfide	376.1
Fluoride	USEPA 300.0

[1] URS Corporation. 2003. *Pilot Study Work Plan,Former EMCA Site Mamaroneck, New York.* March.

3.0 RESULTS

Groundwater level data is provided on Table 1 and a groundwater elevation contour map is presented on Figure 2, which indicates that flow across the site was east towards the Sheldrake River.

Analytical results for groundwater samples collected during the pilot study are summarized in Table 2. Laboratory data sheets and a data usability summary report are provided in Appendix B. Freon 113 concentrations are shown graphically on Figure 3 and analytical data plots are presented on Figure 4 for Freon 113, Freon 123a, methane, sulfate, fluoride, chloride, dissolved oxygen and oxidation reduction potential. Freon 113 results were qualified "J" because continuing calibration response factors were higher than the initial calibration. Therefore, the results for this compound are biased high.

4.0 CONCLUSIONS

Based on the absence of sulfate and the presence of elevated methane, it appears that favorable anaerobic conditions persist at the two most critical locations (MW-03 and MW-07). The concentrations of Freon 113 and Freon 123a have decreased at downgradient location MW-07 and the degradation product Freon 1113 has been produced (this is the first event in which Freon 1113 has been quantified/confirmed, it was detected as a tentatively identified compound). The concentration of Freon 113 has rebounded at MW-03, within the area of the pilot study injection grid. At this location, considerable Freon 123a has been produced and Freon 1113 is also present. A possible explanation for the rebound is that the Freon 113 initially adsorbed into the vegetable oil at the time of injection is now dissolving back into the aquifer faster than the anaerobic biological activity can complete reductive dechlorination. Note that the concentration of Freon 113 at MW-03 dropped two orders of magnitude between 0 and 32 days following injection whereas anaerobic conditions (based on high methane and the absence of sulfate) were not established at this location until sometime between 32 and 90 days following injection.

5.0 RECOMMENDATIONS

Based on the results of this latest sampling event, an additional injection of sodium lactate and vegetable oil is recommended. Additional substrate should be injected to continue and enhance conditions favorable for degradation of the site contaminants. To immediately enhance favorable conditions in the vicinity of MW-03, where most of the contamination remains, it is recommended that sodium lactate be injected at locations similar to where vegetable oil and sodium lactate were injected during the pilot study. This injection is expected to enhance the conditions at downgradient location MW-07 in about 90 days. Further, it is recommended that vegetable oil be injected upgradient from MW-03, to provide for a longer lasting enhancement of the anaerobic conditions at MW-03. Injection of vegetable oil in the immediate vicinity of MW-03 is not recommended to prevent adsorption of the remaining contamination into the freshly injected oil.

On behalf of Rohm and Haas, URS will prepare an Interim Remedial Measure (IRM) Work Plan for NYSDEC review that provides details on the proposed injection scheme.

TABLES

TABLE 1
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ELEVATION MEASUREMENTS (7/22/04)

Location	Measuring Point Elevation (ft.)	Depth to Water (ft.)	Water Surface Elevation (ft.)
GZ-03	102.71	8.54	94.17
GZ-06	101.55	7.44	94.11
MW-01	99.22	5.40	93.82
MW-02	99.18	5.85	93.33
MW-03	99.35	6.08	93.27
MW-04	98.61	5.36	93.25
MW-05	98.14	5.19	92.95
MW-06	ND	6.06	ND
MW-07	ND	6.21	ND
WS-04	97.00	13.51	83.49

Notes:

ND = Not Determined

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID		GZ06_52103	GZ06	GZ06-091703	GZ-06-121803	GZ06
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/21/03	07/23/03	09/17/03	12/18/03	07/22/04
Parameter	**Units**					
Volatiles						
Acetone	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
Benzene	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R	R	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	NA	NA	NA	NA	24
1,1-Dichloroethene	UG/L	0.8 J	1.5 J	2.0 U	2.0 U	NA
cis-1,2-Dichloroethene	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
Ethylbenzene	UG/L	4.0 U	8 U	4.0 U	4.0 U	NA
2-Hexanone	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
4-Methyl-2-Pentanone	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
Tetrachloroethene	UG/L	0.6 J	2 U	0.5 J	1.0 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	100	230	74	5.0 U	100 J
Vinyl Chloride	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
Xylene (total)	UG/L	5.0 U	10 U	5.0 U	5.0 U	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	20	41	26	0.7 J	36
Dissolved Gases						
Methane	UG/L	140	98	89	5.9	48
Total Metals						
Iron	UG/L	2,390	866	517 J	173	NA
Dissolved Metals						
Iron	UG/L	2,290	778	583 J	85.3 B	NA
Miscellaneous Parameters						
Chloride	MG/L	559	474	477 J	218	1,610
Nitrogen, Ammonia (As N)	MG/L	0.1 U	0.1 U	0.1 U	0.1 U	NA

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		GZ-06	GZ-06	GZ-06	GZ-06	GZ-06
Sample ID		GZ06_52103	GZ06	GZ06-091703	GZ-06-121803	GZ06
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/21/03	07/23/03	09/17/03	12/18/03	07/22/04
Parameter	**Units**					
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	0.5 U	0.7	1.3	0.57	NA
Nitrogen, Nitrate	MG/L	0.1 U	NA	0.58	0.1 U	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA	0.12 J	NA	NA	NA
Sulfate	MG/L	25.2	27.5	32.4	5.0 U	20.8
Ferrous Iron (field)	MG/L	2.8	9.6	0.25	0.03	NA
Ferric Iron (lab)	MG/L	0.1 U	0.1 U	0.52	0.143	NA
Fluoride	MG/L	0.1 U	0.1 U	0.1 U	0.32	1.00 U
Oil & Grease	MG/L	NA	NA	R	NA	NA
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	0 U	0 U	5.4	0 U	NA

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TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID		MW02-5-20-03	MW02-5-20-03DUP	DUP-7_22_03	MW02-7_22_03	MW02-091803
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/20/03	05/20/03	07/22/03	07/22/03	09/18/03
Parameter	Units		Field Duplicate (1-1)	Field Duplicate (1-1)		
Volatiles						
Acetone	UG/L	140 J	130 J	R	R	5.0 U
Benzene	UG/L	50 U	25 U	50 U	50 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	NA	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	4.4 J	5.1 J	8.2 J	7.5 J	2.0 U
cis-1,2-Dichloroethene	UG/L	50 U	25 U	50 U	50 U	5.0 U
Ethylbenzene	UG/L	40 U	20 U	40 U	3.4 J	4.0 U
2-Hexanone	UG/L	50 U	25 U	50 U	50 U	5.0 U
4-Methyl-2-Pentanone	UG/L	50 U	25 U	50 U	50 U	5.0 U
Tetrachloroethene	UG/L	10 U	5.0 U	10 U	10 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	710	880	1,000	1,000	54
Vinyl Chloride	UG/L	50 U	25 U	50 U	50 U	5.0 U
Xylene (total)	UG/L	50 U	25 U	7.1 J	11 J	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	34 J	40	40 J	41 J	7.8
Dissolved Gases						
Methane	UG/L	26	32	54	52	410
Total Metals						
Iron	UG/L	27,800	28,300	30,100	30,900	63,800 J
Dissolved Metals						
Iron	UG/L	27,900	28,200	30,500	30,500	60,900 J
Miscellaneous Parameters						
Chloride	MG/L	338	338	307	283	839
Nitrogen, Ammonia (As N)	MG/L	3.3	3.4	4.1	3.8	11.5

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TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-02	MW-02	MW-02	MW-02	MW-02
Sample ID		MW02-5-20-03	MW02-5-20-03DUP	DUP-7_22_03	MW02-7_22_03	MW02-091803
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		05/20/03	05/20/03	07/22/03	07/22/03	09/18/03
Parameter	Units		Field Duplicate (1-1)	Field Duplicate (1-1)		
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	6.6	6.2	6.6	6.1	17.1
Nitrogen, Nitrate	MG/L	0.15	0.16	0.1 U	0.1	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	44	46	32.3	32.5	4.8
Ferrous Iron (field)	MG/L	25.3	NA	25.7	28.0	49.3
Ferric Iron (lab)	MG/L	2.5	3	4.4	2.9	48.3
Fluoride	MG/L	0.28	0.3	0.37	0.39	0.3
Oil & Grease	MG/L	NA	NA	NA	NA	5 U
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	0 U	0 U	0 U	0 U	0 U

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Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-02	MW-02	MW-03	MW-03	MW-03
Sample ID		MW-02-121803	MW-02	MW03_52103	MW03	DUP-91703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/18/03	07/22/04	05/21/03	07/23/03	09/17/03
Parameter	Units					Field Duplicate (1-1)
Volatiles						
Acetone	UG/L	5.0 U	NA	250 U	78	110
Benzene	UG/L	5.0 U	NA	250 U	2.3	2.2
Methyl ethyl ketone (2-Butanone)	UG/L	R	NA	R	130 J	69 J
Chlorotrifluoroethene (Freon-1113)	UG/L	NA	14	NA	NA	NA
1,1-Dichloroethene	UG/L	2.0 U	NA	33 J	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5.0 U	NA	250 U	5.0 U	5.0 U
Ethylbenzene	UG/L	4.0 U	NA	200 U	0.3 J	4.0 U
2-Hexanone	UG/L	5.0 U	NA	250 U	5.0 U	19
4-Methyl-2-Pentanone	UG/L	5.0 U	NA	250 U	5.0 U	11
Tetrachloroethene	UG/L	1.0 U	NA	50 U	1.0 U	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	12	21 J	5,800	68	26
Vinyl Chloride	UG/L	5.0 U	NA	250 U	5.0 U	5.0 U
Xylene (total)	UG/L	5.0 U	NA	250 U	1.1 J	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	3.3 J	4 J	78 J	43	180
Dissolved Gases						
Methane	UG/L	320	140	86	56	2,400
Total Metals						
Iron	UG/L	69,000	NA	1,170	150,000	174,000 J
Dissolved Metals						
Iron	UG/L	69,300	NA	267	152,000	187,000 J
Miscellaneous Parameters						
Chloride	MG/L	769	238	113	143	99.2 J
Nitrogen, Ammonia (As N)	MG/L	11.9	NA	0.36	2.7	0.86

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TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-02	MW-02	MW-03	MW-03	MW-03
Sample ID		MW-02-121803	MW-02	MW03_52103	MW03	DUP-91703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/18/03	07/22/04	05/21/03	07/23/03	09/17/03
Parameter	Units					Field Duplicate (1-1)
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	16.9	NA	1.3	10.8	4.5
Nitrogen, Nitrate	MG/L	0.1 U	NA	2	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	0.1 UJ	NA
Sulfate	MG/L	5.0 U	15.2	32.7	26.9	5.0 U
Ferrous Iron (field)	MG/L	6.3	NA	0.5	3.7	25.5
Ferric Iron (lab)	MG/L	62.7	NA	0.67	146	67.0
Fluoride	MG/L	0.31	0.294	0.28	0.44	0.27
Oil & Grease	MG/L	NA	NA	NA	NA	R
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	0 U	NA	0 U	7.0	6.2

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TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-03	MW-03	MW-03	MW-03	MW-04
Sample ID		MW03-091703	DUP1_121703	MW-03_121703	MW-03	MW04-5-20-03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		09/17/03	12/17/03	12/17/03	07/23/04	05/20/03
Parameter	Units		Field Duplicate (1-1)			
Volatiles						
Acetone	UG/L	110	130 J	120 J	NA	5.0 U
Benzene	UG/L	1.8	10 U	10 U	NA	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	65 J	39 J	38 J	NA	R
Chlorotrifluoroethene (Freon-1113)	UG/L	NA	NA	NA	68 J	NA
1,1-Dichloroethene	UG/L	2.0 U	4.0 U	4 U	NA	2.0 U
cis-1,2-Dichloroethene	UG/L	5.0 U	10 U	10 U	NA	5.0 U
Ethylbenzene	UG/L	4.0 U	8.0 U	8 U	NA	4.0 U
2-Hexanone	UG/L	16	10 U	10 U	NA	5.0 U
4-Methyl-2-Pentanone	UG/L	11	10 U	10 U	NA	5.0 U
Tetrachloroethene	UG/L	1.0 U	4.9	4.6	NA	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	16	150	150	4,900 J	5.0 U
Vinyl Chloride	UG/L	5.0 U	10 U	10 U	NA	5.0 U
Xylene (total)	UG/L	5.0 U	10 U	10 U	NA	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	110	170	160	3,900	5.0 U
Dissolved Gases						
Methane	UG/L	2,500	7,200	4,900	2,700	380
Total Metals						
Iron	UG/L	178,000 J	156,000	164,000	NA	18,400
Dissolved Metals						
Iron	UG/L	186,000 J	167,000	176,000	NA	18,500
Miscellaneous Parameters						
Chloride	MG/L	91.5 J	224	192	71.7	238
Nitrogen, Ammonia (As N)	MG/L	0.95	1.4	1.2	NA	1.6

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TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-03	MW-03	MW-03	MW-03	MW-04
Sample ID		MW03-091703	DUP1_121703	MW-03_121703	MW-03	MW04-5-20-03
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		09/17/03	12/17/03	12/17/03	07/23/04	05/20/03
Parameter	Units		Field Duplicate (1-1)			
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	4.4	4.0	4.0	NA	6.2
Nitrogen, Nitrate	MG/L	0.1 U	0.1 U	0.1 U	NA	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Ferrous Iron (field)	MG/L	27.9	23.5	30.0	NA	17.6
Ferric Iron (lab)	MG/L	93.0	132	134	NA	0.76
Fluoride	MG/L	0.2	0.22	0.25	0.397	0.27
Oil & Grease	MG/L	R	NA	NA	NA	NA
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	0 U	0 U	0 U	NA	0 U

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Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-04	MW-04	MW-04	MW-05	MW-05
Sample ID		MW-04_121703	Dup1	MW-04	MW05_52103	MW-05-121803
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/17/03	07/22/04	07/22/04	05/21/03	12/18/03
Parameter	Units		Field Duplicate (1-1)			
Volatiles						
Acetone	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
Benzene	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
Methyl ethyl ketone (2-Butanone)	UG/L	R	NA	NA	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	NA	10 U	10 U	NA	NA
1,1-Dichloroethene	UG/L	2.0 U	NA	NA	2.0 U	2.0 U
cis-1,2-Dichloroethene	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
Ethylbenzene	UG/L	4.0 U	NA	NA	4.0 U	4.0 U
2-Hexanone	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
4-Methyl-2-Pentanone	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
Tetrachloroethene	UG/L	1.0 U	NA	NA	0.4 J	1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	5.0 U	10 UJ	0.7 J	5.0 U	5.0 U
Vinyl Chloride	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
Xylene (total)	UG/L	5.0 U	NA	NA	5.0 U	5.0 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	5.0 U	10 U	10 U	5.0 U	5.0 U
Dissolved Gases						
Methane	UG/L	35	69	99	27	6.7
Total Metals						
Iron	UG/L	3,640	NA	NA	2,110	15,500
Dissolved Metals						
Iron	UG/L	3,760	NA	NA	1,670	39.7 U
Miscellaneous Parameters						
Chloride	MG/L	294	158	161	49.8	27.5
Nitrogen, Ammonia (As N)	MG/L	1.2	NA	NA	0.25	0.1 U

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-04	MW-04	MW-04	MW-05	MW-05
Sample ID		MW-04_121703	Dup1	MW-04	MW05_52103	MW-05-121803
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		12/17/03	07/22/04	07/22/04	05/21/03	12/18/03
Parameter	Units		Field Duplicate (1-1)			
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	1.9	NA	NA	3.6	0.61
Nitrogen, Nitrate	MG/L	0.1 U	NA	NA	0.22	0.18
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	9.4	10.8	10.8	50.1	61.4
Ferrous Iron (field)	MG/L	2.2	NA	NA	1.7	0.07
Ferric Iron (lab)	MG/L	1.3	NA	NA	0.43	15.4
Fluoride	MG/L	0.19	0.304	0.302	0 U	0.12
Oil & Grease	MG/L	NA	NA	NA	NA	NA
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	0 U	NA	NA	0 U	0 U

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-05	MW-06	MW-06	MW-06	MW-06
Sample ID		MW-05	MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/04	06/10/03	07/22/03	09/18/03	12/17/03
Parameter	**Units**					
Volatiles						
Acetone	UG/L	NA	10 U	5.0 U	5.0 U	10 U
Benzene	UG/L	NA	10 U	5.0 U	5.0 U	10 U
Methyl ethyl ketone (2-Butanone)	UG/L	NA	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	NA	4 U	1.2 J	2.0 U	4 U
cis-1,2-Dichloroethene	UG/L	NA	10 U	1.7 J	1.4 J	1.3 J
Ethylbenzene	UG/L	NA	8 U	4.0 U	4.0 U	8 U
2-Hexanone	UG/L	NA	10 U	5.0 U	5.0 U	10 U
4-Methyl-2-Pentanone	UG/L	NA	10 U	5.0 U	5.0 U	10 U
Tetrachloroethene	UG/L	NA	2 U	1.0 U	1.0 U	2 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	0.5 J	220	180	97	250
Vinyl Chloride	UG/L	NA	10 U	1.2 J	5.0 U	10 U
Xylene (total)	UG/L	NA	10 U	5.0 U	5.0 U	10 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	8.8 J	9.5	8.6	14
Dissolved Gases						
Methane	UG/L	47	49	81	99	78
Total Metals						
Iron	UG/L	NA	14,400	10,500	8,370 J	7,690
Dissolved Metals						
Iron	UG/L	NA	14,300	10,300	8,470 J	7,670
Miscellaneous Parameters						
Chloride	MG/L	63.9	184	82.3	74.6	84.0
Nitrogen, Ammonia (As N)	MG/L	NA	0.19	0.33	0.31	0.36

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-05	MW-06	MW-06	MW-06	MW-06
Sample ID		MW-05	MW06-6-10-03	MW06-7_22_03	MW06-091803	MW-06_121703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/04	06/10/03	07/22/03	09/18/03	12/17/03
Parameter	**Units**					
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	NA	0.72	1.1	0.88	0.79
Nitrogen, Nitrate	MG/L	NA	0.33	0.1 U	0.1 U	0.1 UJ
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	NA	NA	NA
Sulfate	MG/L	42.3	32	30.5	39.2	39.1
Ferrous Iron (field)	MG/L	NA	14.3	8.6	6.0	8.7
Ferric Iron (lab)	MG/L	NA	0.12	1.9	8.4	1.0 U
Fluoride	MG/L	0.103	0.46	0.56	0.37	0.42
Oil & Grease	MG/L	NA	NA	NA	5 U	NA
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	NA	0 U	5.7	0 U	0 U

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID		MW-06	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/04	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**					
Volatiles						
Acetone	UG/L	NA	250 U	500 U	250 U	50 U
Benzene	UG/L	NA	250 U	500 U	250 U	14
Methyl ethyl ketone (2-Butanone)	UG/L	NA	R	R	R	R
Chlorotrifluoroethene (Freon-1113)	UG/L	5 J	NA	NA	NA	NA
1,1-Dichloroethene	UG/L	NA	100 U	68 J	100 U	20 U
cis-1,2-Dichloroethene	UG/L	NA	250 U	500 U	250 U	50 U
Ethylbenzene	UG/L	NA	200 U	400 U	200 U	49
2-Hexanone	UG/L	NA	250 U	500 U	250 U	50 U
4-Methyl-2-Pentanone	UG/L	NA	250 U	500 U	250 U	50 U
Tetrachloroethene	UG/L	NA	50 U	100 U	50 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	140 J	5,400	8,500	6,100	370
Vinyl Chloride	UG/L	NA	250 U	500 U	250 U	50 U
Xylene (total)	UG/L	NA	250 U	500 U	250 U	50 U
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	23	68 J	130 J	130 J	940
Dissolved Gases						
Methane	UG/L	40	740	420	1,200	1,700
Total Metals						
Iron	UG/L	NA	21,300	21,200	32,700 J	38,900
Dissolved Metals						
Iron	UG/L	NA	20,800	20,800	32,500 J	38,900
Miscellaneous Parameters						
Chloride	MG/L	60.5	140	168	300 J	328
Nitrogen, Ammonia (As N)	MG/L	NA	0.39	0.6	0.66	0.99

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-06	MW-07	MW-07	MW-07	MW-07
Sample ID		MW-06	MW07-6-10-03	MW07	MW07-91703	MW-07_121703
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/23/04	06/10/03	07/23/03	09/17/03	12/17/03
Parameter	**Units**					
Miscellaneous Parameters						
Nitrogen, Kjeldahl, Total	MG/L	NA	1.2	1.8	2.1	2.8
Nitrogen, Nitrate	MG/L	NA	0.1 U	NA	0.1 U	0.1 U
Nitrogen, Nitrate-Nitrite	MG/L	NA	NA	0.1 UJ	NA	NA
Sulfate	MG/L	33.5	32.8	31	23.6	5.0 U
Ferrous Iron (field)	MG/L	NA	20.2	19.8	33.8	19.5
Ferric Iron (lab)	MG/L	NA	1	1.4	14.1	19.4
Fluoride	MG/L	0.467	0.33	0.25	0.24	0.19
Oil & Grease	MG/L	NA	NA	NA	5.44 U	NA
Tentatively Identified Compound						
Chlorotrifluoroethene (FREON-1113)	UG/L	NA	0 U	0 U	0 U	0 U

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-07
Sample ID		MW-07
Matrix		Groundwater
Depth Interval (ft)		-
Date Sampled		07/22/04
Parameter	**Units**	
Volatiles		
Acetone	UG/L	NA
Benzene	UG/L	NA
Methyl ethyl ketone (2-Butanone)	UG/L	NA
Chlorotrifluoroethene (Freon-1113)	UG/L	210
1,1-Dichloroethene	UG/L	NA
cis-1,2-Dichloroethene	UG/L	NA
Ethylbenzene	UG/L	NA
2-Hexanone	UG/L	NA
4-Methyl-2-Pentanone	UG/L	NA
Tetrachloroethene	UG/L	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	110 J
Vinyl Chloride	UG/L	NA
Xylene (total)	UG/L	NA
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	50
Dissolved Gases		
Methane	UG/L	2,500
Total Metals		
Iron	UG/L	NA
Dissolved Metals		
Iron	UG/L	NA
Miscellaneous Parameters		
Chloride	MG/L	303
Nitrogen, Ammonia (As N)	MG/L	NA

Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 2
FORMER EMCA SITE, MAMARONECK, NEW YORK
GROUNDWATER ANALYTICAL RESULTS

Location ID		MW-07
Sample ID		MW-07
Matrix		Groundwater
Depth Interval (ft)		-
Date Sampled		07/22/04
Parameter	**Units**	
Miscellaneous Parameters		
Nitrogen, Kjeldahl, Total	MG/L	NA
Nitrogen, Nitrate	MG/L	NA
Nitrogen, Nitrate-Nitrite	MG/L	NA
Sulfate	MG/L	5.0 U
Ferrous Iron (field)	MG/L	NA
Ferric Iron (lab)	MG/L	NA
Fluoride	MG/L	0.190
Oil & Grease	MG/L	NA
Tentatively Identified Compound		
Chlorotrifluoroethene (FREON-1113)	UG/L	NA

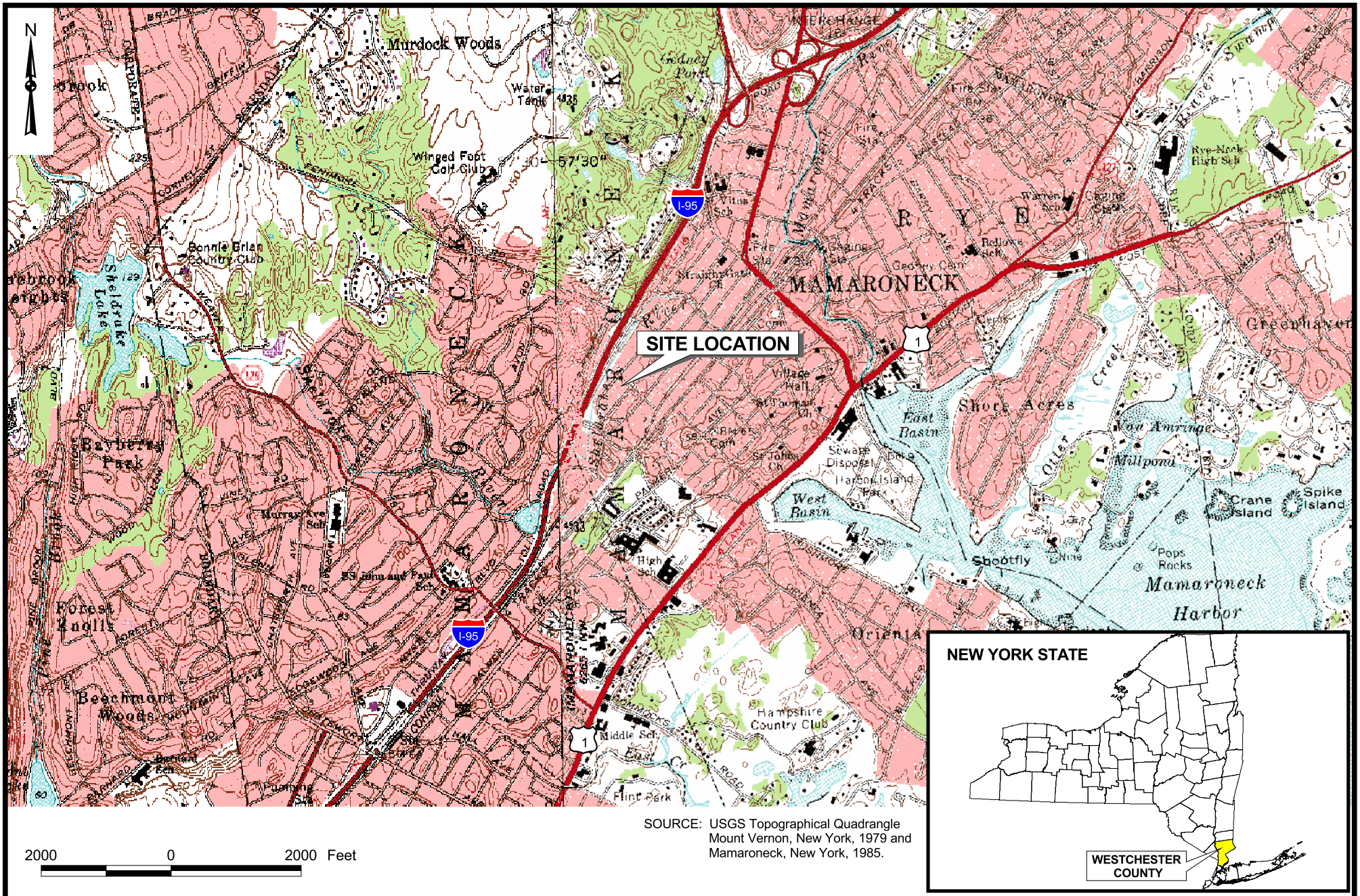
Flags assigned during chemistry validation are shown.

Only Detected Results Reported.

Detection Limits shown are PQL

FIGURES

N:\11172730.00000\DB\GIS\2001\report00.apr SITE LOCATION
9/24/2004

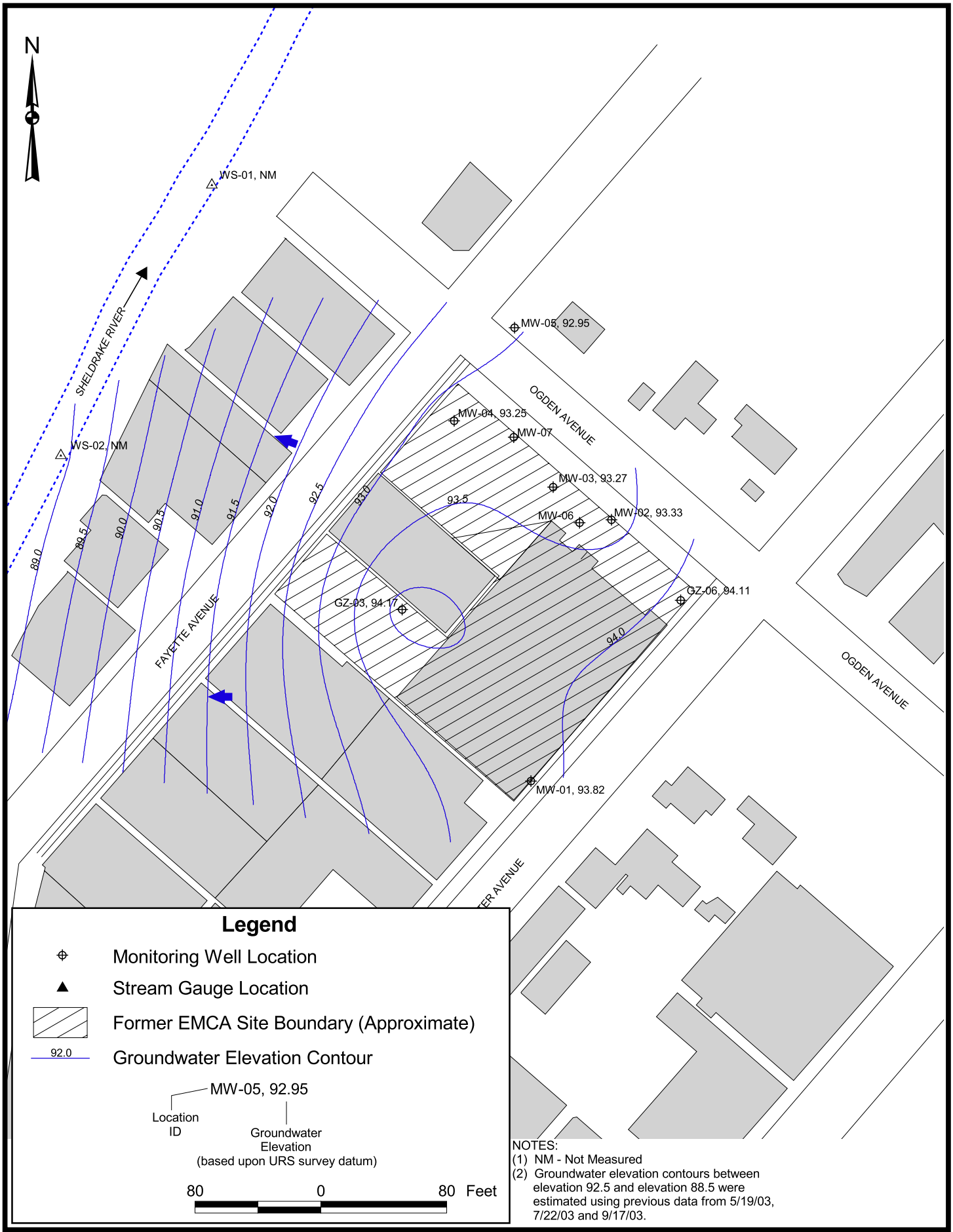


SOURCE: USGS Topographical Quadrangle Mount Vernon, New York, 1979 and Mamaroneck, New York, 1985.

URS

FORMER EMCA SITE
LOCATION MAP

FIGURE 1



N:\11172730.00000\DB\GIS\2001\welev.apr 07/04 GROUNDWATER ELEVATION CONTOURS 9/24/2004

URS

FORMER EMCA SITE
GROUNDWATER ELEVATION CONTOUR
MAP (JULY 2004)

FIGURE 2

N

MW-04	10/99	07/00	07/01	05/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	11	ND	ND	ND	ND	0.70

MW-05	07/00	07/01	05/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	7	ND	ND	ND	0.50

MW-07	06/03	07/03	09/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	5400	8500	6100	370	110

MW-03	10/99	07/00	07/01	05/03	07/03	09/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	17000	11000	13000	5800	68	26	150	4900

MW-02	10/99	07/00	07/01	05/03	07/03	09/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	740	1700	2400	880	1000	54	12	21

MW-06	06/03	07/03	09/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	220	180	97	250	140

GZ-06	05/88	03/89	10/99	07/00	07/01	05/03	07/03	09/03	12/03	07/04
1,1,2-Trichloro-1,2,2-trifluoroethane	1274	200	49	900	250	100	230	74	ND	100

OGDEN AVENUE

FAYETTE AVENUE

CENTER AVENUE

SHELDRAKE RIVER

Legend

- Existing Monitoring Well Location
- Concentration Exceeds NYSDEC TOGS (1.1.1) Class GA Standards
- Generalized Groundwater Flow Direction

GZ-06 05/88 1,1,2-Trichloro-1,2,2-trifluoroethane, 1274

Location ID; Sample Date; Parameter; Concentration

ND - Not Detected

All Analytical Results are Reported in UG/L

60 0 60 Feet

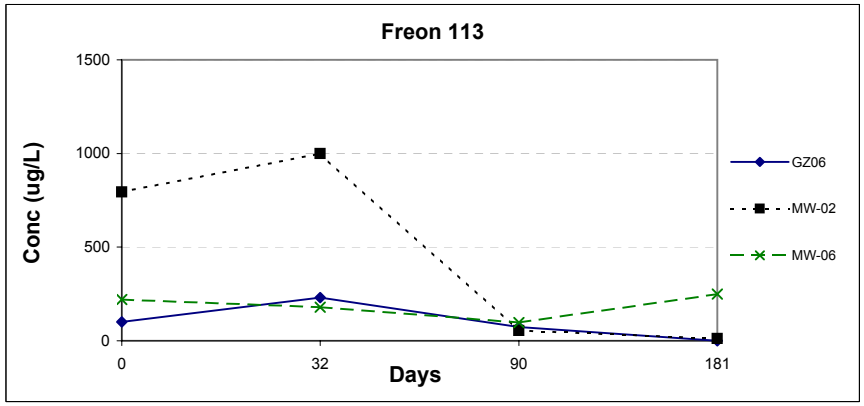
FORMER EMCA SITE
SUMMARY OF FREON 113 DETECTIONS IN GROUNDWATER

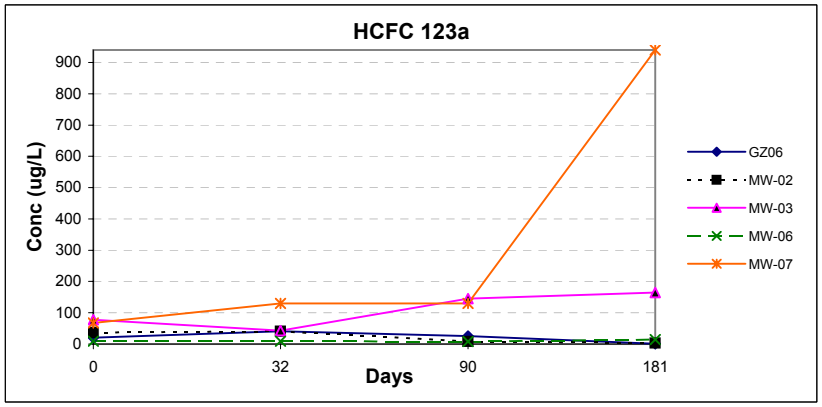
URS

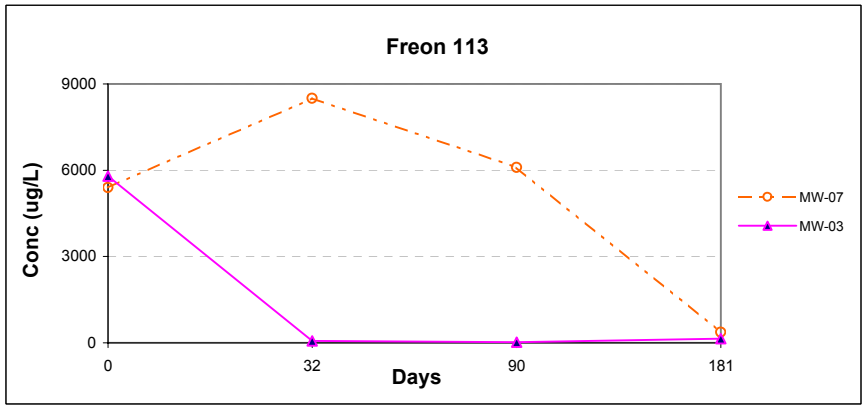
FIGURE 3

N:\11172730.00000\DB\GIS\2001\chemical.apr REVISED SUMMARY OF FREON 113 DETECTIONS 9/24/2004

FIGURE 4
FORMER EMCA SITE
GROUNDWATER ANALYTICAL DATA PLOTS







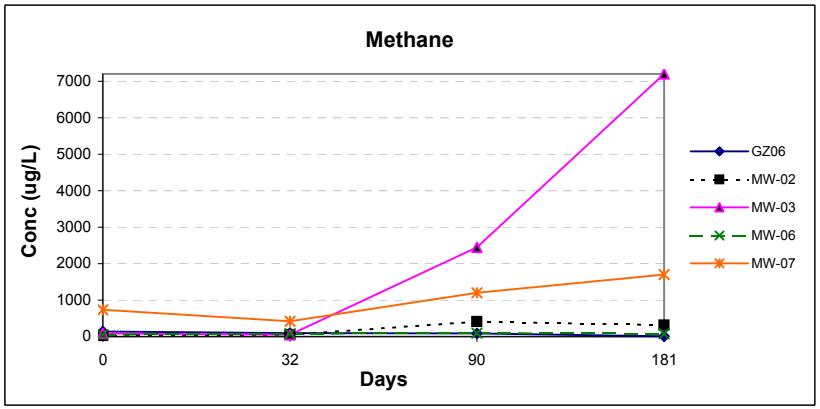
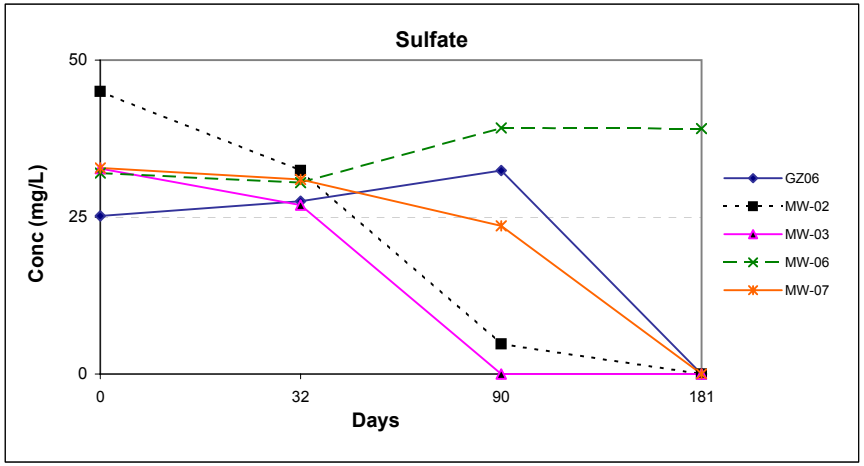
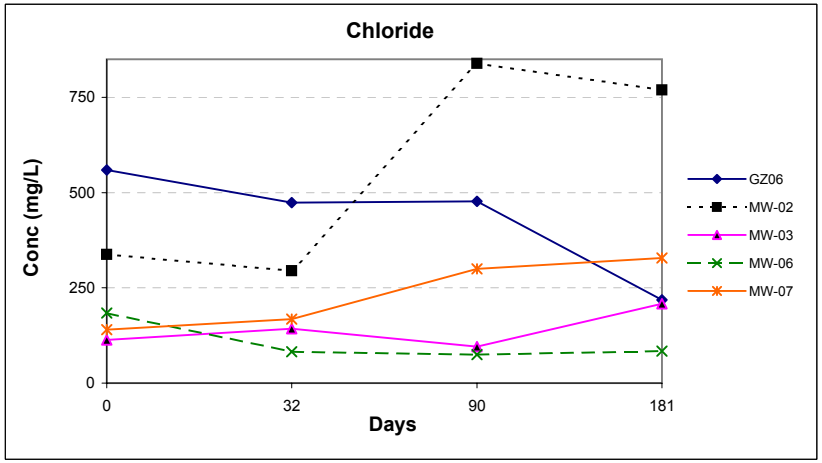
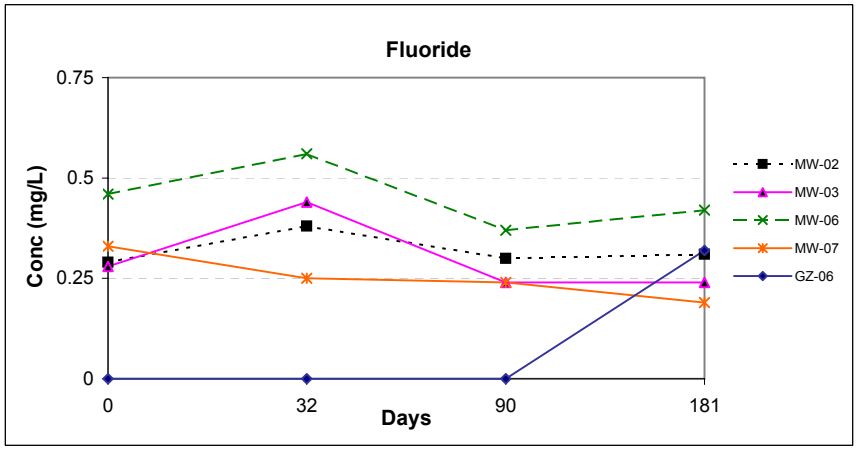
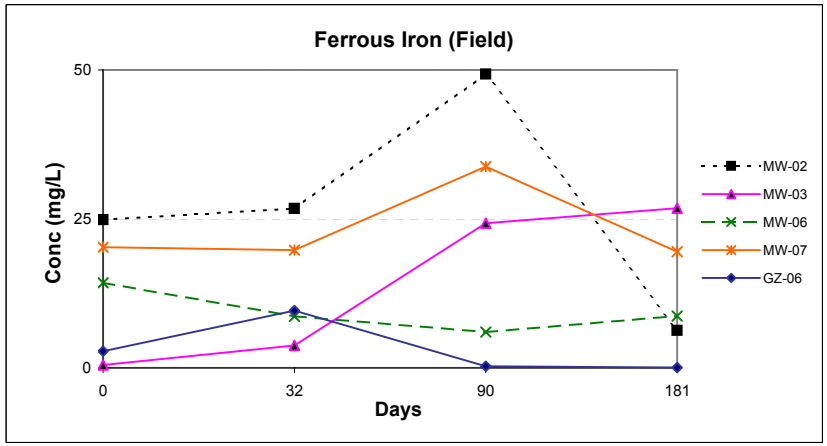


FIGURE 4
FORMER EMCA SITE
GROUNDWATER ANALYTICAL DATA PLOTS









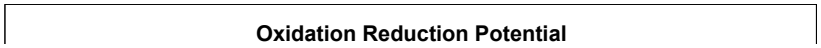
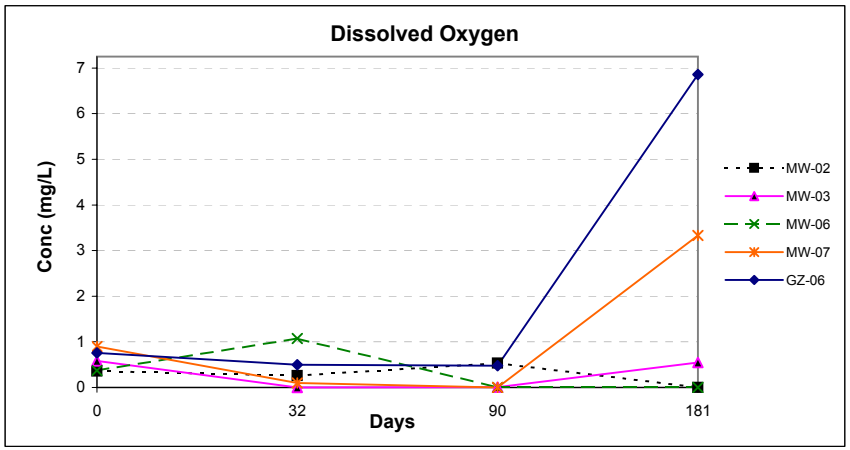
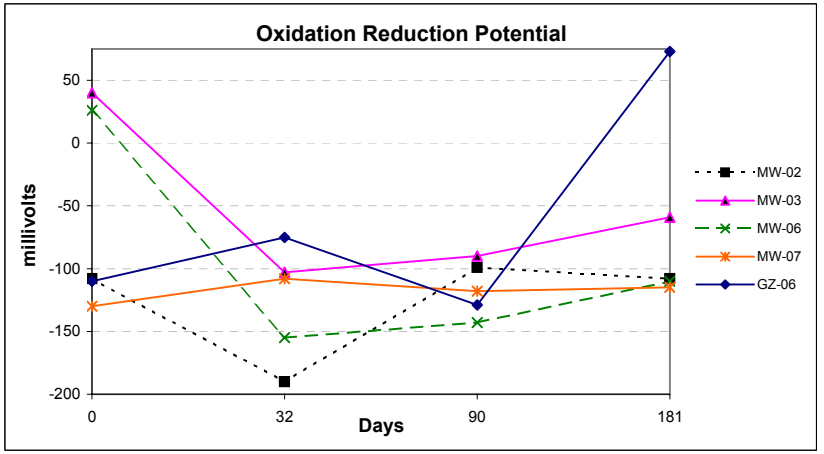


FIGURE 4
FORMER EMCA SITE
GROUNDWATER ANALYTICAL DATA PLOTS





APPENDIX A

LOW FLOW GROUNDWATER PURGING/SAMPLING LOGS

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: GZ-06

Date: 7/22/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 7.44 Depth to Well Bottom (ft.): 15.31 Well Diameter (in): 2 Screen Length (ft.): 10

Casing Type: PVC Volume in 1 Well Casing (liters): 4.9 Estimated Purge Volume (liters): 5.1

Sample ID: GZ-06-7/22/04 Sample Time: 11:35 QA/QC: MS/MSD

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
11:14	6.12	19.7	5.20	2.95	13.0	-255	200	7.60
11:17	6.07	19.0	5.19	1.78	9.6	-239	250	7.69
11:20	6.07	18.8	5.25	1.49	6.1	-239	250	7.80
11:23	6.07	18.6	5.29	1.30	3.3	-237	250	7.89
11:26	6.07	18.4	5.34	1.14	2.1	-230	250	7.95
11:29	6.07	18.4	5.35	1.12	2.1	-223	250	8.00
11:32	6.07	18.3	5.27	1.15	2.3	-212	250	8.05
11:35	6.07	18.3	5.25	1.15	2.3	-210	250	8.11
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: MW-02

Date: 7/22/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 5.85 Depth to Well Bottom (ft.): 11.80 Well Diameter (in): 1 Screen Length (ft.): 13

Casing Type: PVC Volume in 1 Well Casing (liters): 0.9 Estimated Purge Volume (liters): 5.25

Sample ID: MW-02-7/22/04 Sample Time: 15:18 QA/QC: None

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:54	6.47	20.7	2.35	1.47	30	-113	250	5.85
14:57	6.41	20.2	2.32	1.10	15	-115	250	5.85
15:00	6.51	20.2	2.36	0.99	8.4	-121	250	5.85
15:03	6.56	20.2	2.36	1.11	5.3	-126	250	5.85
15:06	6.59	20.2	2.35	1.01	6.4	-129	250	5.85
15:09	6.59	20.1	2.35	1.14	6.1	-130	250	5.85
15:12	6.62	20.0	2.34	1.01	5.9	-132	250	5.85
15:15	6.62	20.0	2.34	0.91	5.6	-133	250	5.85
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: MW-03

Date: 7/23/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 6.08 Depth to Well Bottom (ft.): 14.30 Well Diameter (in): 1 Screen Length (ft.): 10

Casing Type: PVC Volume in 1 Well Casing (liters): 1.3 Estimated Purge Volume (liters): 0.9

Sample ID: MW-03-7/23/04 Sample Time: 08:45 QA/QC: None

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
08:21	6.70	19.0	2.40	2.25	80	-144	150	10.58
08:24	6.63	19.2	2.45	1.27	60	-147	150	13.56
08:27	6.61	19.5	2.40	1.05	180	-143	150	13.95
Pump off at 08:28, well is dry. Allow time for water level recovery and collect sample.								
Purge water is dark gray color with an odor and sheen.								
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: MW-04

Date: 7/22/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 5.36 Depth to Well Bottom (ft.): 10.56 Well Diameter (in): 1 Screen Length (ft.): 10

Casing Type: PVC Volume in 1 Well Casing (liters): 0.8 Estimated Purge Volume (liters): 7.5

Sample ID: MW-04-7/22/04 Sample Time: 13:30 QA/QC: DUP1-7/22/04

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
12.58	6.65	22.5	0.93	2.13	400	-73	250	5.90
13.01	6.49	22.3	0.91	1.34	100	-75	250	5.92
13.04	6.44	21.9	0.93	0.95	19	-83	250	5.96
13.07	6.47	21.7	0.96	0.91	8.5	-94	250	6.03
13.10	6.54	21.5	1.00	0.93	6.2	-109	250	6.15
13.13	6.61	21.4	1.02	0.85	5.0	-119	250	6.20
13.16	6.63	21.4	1.03	0.88	3.2	-123	250	6.20
13.19	6.66	21.3	1.02	0.88	3.3	-128	250	6.21
13.22	6.67	21.3	1.04	0.84	3.5	-132	250	6.19
13.25	6.68	21.3	1.05	0.83	3.2	-134	250	6.19
13.28	6.69	21.3	1.05	0.82	3.1	-136	250	6.19
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: MW-05

Date: 7/23/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 5.19 Depth to Well Bottom (ft.): 15.60 Well Diameter (in): 1 Screen Length (ft.): 12

Casing Type: PVC Volume in 1 Well Casing (liters): 1.6 Estimated Purge Volume (liters): 4.8

Sample ID: MW-05 7/23/04 Sample Time: 09:40 QA/QC: None

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
09:16	6.32	17.5	0.575	3.92	350	38	200	5.25
09:19	6.01	16.9	0.555	2.13	150	52	200	5.26
09:22	5.91	16.6	0.540	1.80	75	59	200	5.29
09:25	6.06	16.4	0.513	1.46	34	52	200	5.29
09:28	6.18	16.4	0.495	1.28	37	45	200	5.29
09:31	6.24	16.3	0.475	1.16	31	43	200	5.29
09:34	6.26	16.3	0.466	0.99	30	45	200	5.29
09:37	6.26	16.2	0.465	0.97	33	45	200	5.29
09:40	6.26	16.2	0.463	0.97	31	46	200	5.29
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: MW-06

Date: 7/23/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 6.06 Depth to Well Bottom (ft.): 18.74 Well Diameter (in): 1 Screen Length (ft.): 10

Casing Type: PVC Volume in 1 Well Casing (liters): 2.0 Estimated Purge Volume (liters): 4.8

Sample ID: MW-06 7/23/04 Sample Time: 07:47 QA/QC: None

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
07:23	6.93	19.4	0.655	2.93	300	15	200	6.08
07:26	6.65	18.6	0.599	1.71	121	9	200	6.08
07:29	6.71	18.3	0.561	1.34	60	-18	200	6.08
07:32	6.81	18.0	0.539	1.12	35	-39	200	6.08
07:35	6.84	18.0	0.531	1.10	26	-46	200	6.08
07:38	6.88	17.9	0.522	1.01	15	-54	200	6.08
07:41	6.89	17.8	0.518	1.03	12	-59	200	6.08
07:44	6.92	17.8	0.515	1.00	14	-63	200	6.08
07:47	6.90	17.8	0.513	1.04	14	-64	200	6.08
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: Edible Oil/Sodium Lactate Pilot Study Site: Former EMCA Site Well I.D.: MW-07

Date: 7/22/2004 Sampling Personnel: Eric Lovendowski Company: URS Corporation

Purging/ Sampling Device: Low Flow Peristaltic Pump (GeoPump 2) Tubing Type: Teflon and Silicone Pump/Tubing Inlet Location: Midpoint of Screen

Measuring Point: Below Top of Riser Initial Depth to Water (ft.): 6.21 Depth to Well Bottom (ft.): 19.92 Well Diameter (in): 1 Screen Length (ft.): 10

Casing Type: PVC Volume in 1 Well Casing (liters): 2.1 Estimated Purge Volume (liters): 3.15

Sample ID: MW-07 7/22/04 Sample Time: 14:20 QA/QC: None

Sample Paramaters: Freon, Methane, Chloride, Sulfate and Fluoride

PURGE PARAMETERS

TIME	pH	TEMP (^{0}C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
13:59	6.54	17.0	1.91	2.00	>1,100	-126	175	6.35
14:02	6.36	17.0	1.85	1.27	750	-125	175	6.35
14:05	6.55	16.8	1.80	1.07	240	-144	175	6.35
14:08	6.59	16.6	1.75	1.01	120	-148	175	6.35
14:11	6.58	16.6	1.72	0.94	75	-149	175	6.35
14:14	6.60	16.6	1.70	0.88	70	-153	175	6.35
14:17	6.60	16.6	1.69	0.88	65	-153	175	6.35
Tolerance:	**0.1**	**---**	**3%**	**10%**	**10%**	**+ or - 10**	**---**	**---**

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft (vol $_{cyl} = \pi r^2 h$)

APPENDIX B

DATA USABILITY SUMMARY REPORT

DATA USABILITY SUMMARY REPORT

PILOT STUDY

JULY 2004 SAMPLING EVENT

FORMER EMCA SITE
SITE NO. 360025
MAMARONECK, NEW YORK

Analyses Performed by:

SEVERN TRENT LABORATORIES, INC.
777 NEW DURHAM ROAD
EDISON, NEW JERSEY 08817

Prepared for:

ROHM & HAAS COMPANY
3100 STATE ROAD
CROYDON, PA 19021

Prepared by:

URS CORPORATION
77 GOODELL STREET
BUFFALO, NY 14203

SEPTEMBER 2004

TABLE OF CONTENTS

TABLES
(Following Text)

ATTACHMENTS

I. INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *Guidance for the Development of Data Usability Summary Reports*, dated June 1999. This DUSR discusses the results for the groundwater samples collected from the Pilot Study conducted at the Former EMCA Site located in Mamaroneck, New York.

II. ANALYTICAL METHODOLOGIES

The data being evaluated are for seven groundwater samples, one field duplicate, one matrix spike/matrix spike duplicate (MS/MSD), one equipment rinsate blank, and two trip blanks collected on July 22-23, 2004. Table 1 summarizes the samples collected and the requested analytical parameters. The analytical laboratory that performed the analyses is Severn Trent Laboratories, Inc. (Edison, NJ and Sheldon, CT). The samples were analyzed for the following parameters:

Parameter	Method No.	References
Volatile Organic Compounds (VOCs)	OLM04.2	1
Chloride	SM 4500-Cl-B	2
Fluoride	300.0	1
Sulfate	375.4	1
Sulfide	376.1	1
Methane	RSK-175	3

References:

1 NYSDEC Analytical Services Protocol, June 2000.

2 Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998.

3 USEPA, R.S. Kerr Environmental Research Laboratory, March 15, 1989.

Notes:

- VOCs include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113), 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a), and chlorotrifluoroethene (Freon-1113).

A limited data validation was performed following the guidelines in USEPA Region II *Contract Laboratory Program Organics Data Review and Preliminary Review for Statement of Work OLM04.2*, SOP No. HW-6, Revision 12, March 2001 and USEPA Region II *Evaluation of Metals Data for the Contract Laboratory Program, based on SOW 3/90*, Revision XI, January 1992. Qualifications applied to the data include "J" (estimated concentration) and "UJ" (estimated quantitation limit). The validated analytical results are presented in Tables 2 and 3. Copies of the validated laboratory results

(i.e., Form 1's) are presented in Attachment A. Documentation supporting the qualification of data is presented in Attachment B. Only problems affecting data usability are discussed in this report.

III. DATA DELIVERABLE COMPLETENESS

The laboratory deliverable data packages were in accordance with NYSDEC Analytical Services Protocol (ASP) Category A requirements.

IV. PRESERVATION/HOLDING TIMES/SAMPLE RECEIPT

All samples were received by the laboratories intact, properly preserved, and were analyzed within required holding times.

V. NONCONFORMANCES

Chain-of-Custodies

The chain-of-custody (COC) associated with samples MW-03, MW-05, MW-06, and TB1-7/23/04 was not signed and dated by the laboratory upon cooler receipt. The laboratory did however provided internal custody documentation indicating the samples were received on July 24, 2004. The date of sample receipt was further verified by URS from FedEx® tracking records. Documentation supporting the date of sample receipt (i.e., laboratory internal custody records and FedEx® tracking records) is presented in Attachment B. No data qualification was deemed necessary for this COC non-conformance.

Initial and Continuing Calibrations

All initial calibration (ICAL) average relative response factors (RRF) and continuing calibration (CCAL) RRFs were within quality control (QC) limits, except for the CCAL RRF for Freon-113 [i.e., percent difference (%D) >25.0%]. The detected and non-detect results for Freon-113 for all samples (except TB-07/22/04, which was not associated with this CCAL) were qualified "J" and "UJ", respectively, per USEPA Region II data validation guidelines. The detected Freon-113 results should be considered high biased. Documentation supporting the qualification of data (i.e., CCAL Form 7) is presented in Attachment B.

Dilutions

The fluoride analysis of sample GZ-06 was performed at a secondary dilution only due to sample matrix. No fluoride was detected in sample GZ-06.

VI. SUMMARY

All sample analyses were found to be compliant with the method criteria, except where previously noted. Those results qualified "J/UJ" (estimated concentration/estimated reporting limit) are considered conditionally usable. All other sample results are usable as reported. URS does not recommend the re-collection of any samples at this time.

TABLE 1
SAMPLE AND ANALYSIS SUMMARY
FORMER EMCA SITE - PILOT STUDY

SDG No.	Sample ID	Matrix	Date of Collection	VOCs*	Methane	Wet Chemistry**	Comments
H984/H9845/ H991	TB1-07/22/04	Water	07/22/04	---	X	---	---
	EB1-07/22/04	Water		X	X	X	---
	GZ-06	GW		X	X	X	MS/MSD
	MW-04	GW		X	X	X	---
	MW-07	GW		X	X	X	---
	DUP-1	GW		X	X	X	Field Duplicate of MW-04
	MW-02	GW		X	X	X	---
	TB1-07/23/04	Water	07/23/04	---	X	---	---
	MW-06	GW		X	X	X	---
	MW-03	GW		X	X	X	---
	MW-05	GW		X	X	X	---

Notes:
* - Volatile Organic Compounds (VOCs) include 1,1,2-trichloro-1,2,2-trifluoroethane (Freon-113), 1,2-dichloro-1,1,2-trifluoroethane (Freon-123a), and chlorotrifluoroethene (Freon-1113).
** - Wet Chemistry parameters include chloride, fluoride, sulfate, and sulfide.

X - Parameter requested.
--- - Parameter not requested/analyzed or no comment.
TB - Trip Blank
EB - Equipment Rinsate Blank
DUP - Field Duplicate
GW - Groundwater
MS/MSD - Matrix Spike/Matrix Spike Duplicate

TABLE 2
ANALYTICAL GROUNDWATER SAMPLE RESULTS
FORMER EMCA SITE

Location ID		GZ-06	MW-02	MW-03	MW-04	MW-04
Sample ID		GZ06	MW-02	MW-03	Dup1	MW-04
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		07/22/04	07/22/04	07/23/04	07/22/04	07/22/04
Parameter	Units				Field Duplicate (1-1)	
Volatiles						
Chlorotrifluoroethene (Freon-1113)	UG/L	24	14	68 J	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	100 J	21 J	4,900 J	10 UJ	0.7 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	36	4 J	3,900	10 U	10 U
Dissolved Gases						
Methane	UG/L	48	140	2,700	69	99
Miscellaneous Parameters						
Chloride	MG/L	1,610	238	71.7	158	161
Sulfate	MG/L	20.8	15.2	5.0 U	10.8	10.8
Sulfide	MG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Fluoride	MG/L	1.00 U	0.294	0.397	0.304	0.302

Flags assigned during chemistry validation are shown.

MADE BY: __PRF_09/14/04___ CHKD BY: __JJL_09/14/04___

Detection Limits shown are MDL

TABLE 2
ANALYTICAL GROUNDWATER SAMPLE RESULTS
FORMER EMCA SITE

Location ID		MW-05	MW-06	MW-07
Sample ID		MW-05	MW-06	MW-07
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		07/23/04	07/23/04	07/22/04
Parameter	**Units**			
Volatiles				
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	5 J	210
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	0.5 J	140 J	110 J
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	23	50
Dissolved Gases				
Methane	UG/L	47	40	2,500
Miscellaneous Parameters				
Chloride	MG/L	63.9	60.5	303
Sulfate	MG/L	42.3	33.5	5.0 U
Sulfide	MG/L	1.0 U	1.0 U	1.0 U
Fluoride	MG/L	0.103	0.467	0.190

Flags assigned during chemistry validation are shown.

MADE BY: __PRF_09/14/04___ CHKD BY: __JJL_09/14/04___

Detection Limits shown are MDL

TABLE 3
ANALYTICAL FIELD QC SAMPLE RESULTS
FORMER EMCA SITE

Location ID		FIELDQC	FIELDQC	FIELDQC
Sample ID		EB1	Trip_Blank	TB
Matrix		Water	Water	Water
Depth Interval (ft)		-	-	-
Date Sampled		07/22/04	07/22/04	07/23/04
Parameter	Units	Equipment Blank (1-1)	Trip Blank (1-1)	Trip Blank (1-1)
Volatiles				
Chlorotrifluoroethene (Freon-1113)	UG/L	10 U	10 U	10 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UG/L	10 UJ	10 U	10 UJ
1,2-Dichloro-1,1,2-trifluoroethane (Freon-123A)	UG/L	10 U	10 U	10 U
Dissolved Gases				
Methane	UG/L	5.0 U	5.0 U	5.0 U
Miscellaneous Parameters				
Chloride	MG/L	5.0 U	NA	NA
Sulfate	MG/L	5.0 U	NA	NA
Sulfide	MG/L	1.0 U	NA	NA
Fluoride	MG/L	1.00 U	NA	NA

Flags assigned during chemistry validation are shown.

MADE BY: __PRF_09/14/04___ CHKD BY: __JJL_09/14/04___

Detection Limits shown are MDL

ATTACHMENT A

VALIDATED FORM 1's

DEFINITIONS OF USEPA REGION II DATA QUALIFIERS

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

D – The sample results are reported from a separate secondary dilution analysis.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB

Lab Name: STL EDISON Contract. N/A

Lab Code: N/A Case No : N/A SAS No.: N/A SDG No.· H9845

Matrix: (soil/water) WATER Lab Sample ID. 549736

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: B32666

Level: (low/med) LOW Date Received: 07/23/04

% Moisture: not dec. _____ Date Analyzed. 07/29/04

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	10	U
79-38-9	Chlorotrifluoroethene	10	U
354-23-4	1,2-Dichlorotrifluoroethane	10	U

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EB1

Lab Name: STL EDISON Contract. N/A

Lab Code: N/A Case No.· N/A SAS No : N/A SDG No.: H9845

Matrix. (soil/water) WATER Lab Sample ID: 549737

Sample wt/vol: 5.000 (g/mL) ML Lab File ID. B32686

Level: (low/med) LOW Date Received: 07/23/04

% Moisture· not dec. _____ Date Analyzed. 07/30/04

GC Column· DB624 ID 0 53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	10	U
79-38-9	Chlorotrifluoroethene	10	U
354-23-4	1,2-Dichlorotrifluoroethane	10	U

9/6/04

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GZ06

Lab Name: STL EDISON Contract N/A

Lab Code: N/A Case No : N/A SAS No.. N/A SDG No.. H9845

Matrix. (soil/water) WATER Lab Sample ID: 549738

Sample wt/vol 5.000 (g/mL) ML Lab File ID. B32698

Level (low/med) LOW Date Received: 07/23/04

% Moisture: not dec _____ Date Analyzed. 07/30/04

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 2 0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	100	J
79-38-9	Chlorotrifluoroethene	24	
354-23-4	1,2-Dichlorotrifluoroethane	36	

9/10/04

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-04

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.. N/A SAS No.· N/A SDG No.: H9845

Matrix: (soil/water) WATER Lab Sample ID: 549739

Sample wt/vol. 5 000 (g/mL) ML Lab File ID· B32690

Level: (low/med) LOW Date Received: 07/23/04

% Moisture: not dec _____ Date Analyzed: 07/30/04

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1 0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	0.7	~~J~~ 5
79-38-9	Chlorotrifluoroethene	10	U
354-23-4	1,2-Dichlorotrifluoroethane	10	U

9/6/04

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-07

Lab Name: STL EDISON Contract: N/A

Lab Code. N/A Case No.: N/A SAS No.: N/A SDG No.: H9845

Matrix: (soil/water) WATER Lab Sample ID: 549740

Sample wt/vol. 5.000 (g/mL) ML Lab File ID: B32691

Level: (low/med) LOW Date Received: 07/23/04

% Moisture not dec _____ Date Analyzed: 07/30/04

GC Column: DB624 ID· 0.53 (mm) Dilution Factor: 2 0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	110	J
79-38-9	Chlorotrifluoroethene	210	
354-23-4	1,2-Dichlorotrifluoroethane	50	

9/04

FORM I VOA-1 OLM04 2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

DUP1

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.: N/A SAS No . N/A SDG No. H9845

Matrix: (soil/water) WATER Lab Sample ID: 549741

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: B32699

Level: (low/med) LOW Date Received 07/23/04

% Moisture. not dec _____ Date Analyzed: 07/30/04

GC Column: DB624 ID: 0 53 (mm) Dilution Factor. 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS. (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	10	~~U~~
79-38-9	Chlorotrifluoroethene	10	U
354-23-4	1,2-Dichlorotrifluoroethane	10	U

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-02

Lab Name: STL EDISON Contract N/A

Lab Code: N/A Case No.: N/A SAS No : N/A SDG No . H9845

Matrix. (soil/water) WATER Lab Sample ID: 549742

Sample wt/vol: 5 000 (g/mL) ML Lab File ID. B32693

Level: (low/med) LOW Date Received 07/23/04

% Moisture: not dec. _____ Date Analyzed: 07/30/04

GC Column. DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	21	J
79-38-9	Chlorotrifluoroethene	14	
354-23-4	1,2-Dichlorotrifluoroethane	4	J

glw 1

FORM I VOA-1 OLM04.2

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

TRIP_BLANK

Lab Name. STL EDISON Contract· N/A

Lab Code. N/A Case No.: N/A SAS No.· N/A SDG No H9845

Matrix: (soil/water) WATER Lab Sample ID. 549781

Sample wt/vol: 5.000 (g/mL) ML Lab File ID· B32694

Level: (low/med) LOW Date Received: 07/24/04

% Moisture: not dec. _____ Date Analyzed· 07/30/04

GC Column: DB624 ID: 0 53 (mm) Dilution Factor 1 0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	10	~~U~~
79-38-9	Chlorotrifluoroethene	10	U
354-23-4	1,2-Dichlorotrifluoroethane	10	U

calc'd

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-06

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No : H9845

Matrix: (soil/water) WATER Lab Sample ID. 549782

Sample wt/vol: 5 000 (g/mL) ML Lab File ID: B32695

Level. (low/med) LOW Date Received: 07/24/04

% Moisture: not dec. _____ Date Analyzed. 07/30/04

GC Column: DB624 ID: 0.53 (mm) Dilution Factor 2.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	140	J
79-38-9	Chlorotrifluoroethene	5	J
354-23-4	1,2-Dichlorotrifluoroethane	23	

9/10/04

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-03

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: H9845

Matrix: (soil/water) WATER Lab Sample ID: 549783

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: B32696

Level. (low/med) LOW Date Received: 07/24/04

% Moisture not dec. _____ Date Analyzed: 07/30/04

GC Column: DB624 ID: 0 53 (mm) Dilution Factor. 50.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	4900	J
79-38-9	Chlorotrifluoroethene	68	J
354-23-4	1,2-Dichlorotrifluoroethane	3900	

9/10/04

FORM I VOA-1 OLM04.2

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-05

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.. N/A SDG No.: H9845

Matrix: (soil/water) WATER Lab Sample ID· 549784

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: B32697

Level· (low/med) LOW Date Received: 07/24/04

% Moisture: not dec _____ Date Analyzed: 07/30/04

GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
76-13-1	112-Trichlorotrifluoroethane	0.5	J
79-38-9	Chlorotrifluoroethene	10	U
354-23-4	1,2-Dichlorotrifluoroethane	10	U

FORM I VOA-1 OLM04.2

Client ID: TB
Site: EMCA

Lab Sample No: 549736
Lab Job No: H984

Date Sampled: 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/04/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7073.d

Matrix: WATER
Level: MED
Purge Volume. 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	ND	5.0

Client ID: EB1
Site: EMCA

Lab Sample No: 549737
Lab Job No: H984

Date Sampled: 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/04/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7075.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	ND	5.0

Client ID: GZ06
Site. EMCA

Lab Sample No: 549738
Lab Job No: H984

Date Sampled. 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/05/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7087.d

Matrix: WATER
Level MED
Purge Volume: 10.0 ml
Final Volume: 0 0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	48	5.0

Client ID: **MW-04**
Site· EMCA

Lab Sample No: **549739**
Lab Job No: H984

Date Sampled: 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/04/04
GC Column· GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7077.d

Matrix: WATER
Level. MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor· 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	99	5.0

Client ID: MW-07
Site: EMCA

Lab Sample No. 549740
Lab Job No: H984

Date Sampled: 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/05/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7106.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor. 50.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	2500	250

Client ID: Dup1
Site: EMCA

Lab Sample No: 549741
Lab Job No: H984

Date Sampled: 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/04/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7079.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	69	5.0

Client ID. MW-02
Site. EMCA

Lab Sample No: 549742
Lab Job No: H984

Date Sampled: 07/22/04
Date Received: 07/23/04
Date Analyzed: 08/05/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID· scrc7104.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 2.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	140	10

Site: EMCA

Lab Job No: H984

Date Received· 07/23/2004

Date Sampled· 07/22/04

Matrix: WATER

QA Batch· 2109

Chloride

STL Edison Sample #	Client ID	Date Analyzed	Dilution Factor	Analytical Result Units mg/l
549737	EB1	08/11/04	1 0	ND
549738	GZ06	08/11/04	10 0	1610
549739	MW-04	08/11/04	1 0	161
549740	MW-07	08/11/04	2 0	303
549741	Dup1	08/11/04	1 0	158
549742	MW-02	08/11/04	2.0	238

Quantitation Limit for Chloride is 5 0 mg/l.

Site: EMCA

Lab Job No: H984

Date Received 07/23/2004
Matrix: WATER

Date Sampled: 07/22/04
QA Batch: 2046

Sulfate

STL Edison Sample #	Client ID	Date Analyzed	Dilution Factor	Analytical Result Units mg/l
549737	EB1	08/13/04	1.0	ND
549738	GZ06	08/13/04	1 0	20 8
549739	MW-04	08/13/04	1.0	10 8
549740	MW-07	08/13/04	1 0	ND
549741	Dup1	08/13/04	1.0	10.8
549742	MW-02	08/13/04	1 0	15 2

Quantitation Limit for Sulfate is 5.0 mg/l

Site: EMCA

Lab Job No: H984

Date Received: 07/23/2004
Matrix WATER

Date Sampled: 07/22/04
QA Batch: 1605

Sulfide

STL Edison Sample #	Client ID	Date Analyzed	Dilution Factor	Analytical Result Units mg/l
549737	EB1	07/28/04	1 0	ND
549738	GZ06	07/28/04	1 0	ND
549739	MW-04	07/28/04	1 0	ND
549740	MW-07	07/28/04	1 0	ND
549741	Dup1	07/28/04	1 0	ND
549742	MW-02	07/28/04	1 0	ND

Quantitation Limit for Sulfide is 1 0 mg/l

H984

STL Edison

LABORATORY TEST RESULTS

Job Number: 207270

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON PROJECT: URS-R II ATTN: Sharon Escalante

Customer Sample ID: H984-549737 EB1-072204
Date Sampled.....: 07/22/2004
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 207270-1
Date Received.....: 08/03/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DF	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	ND	U		0.0060	0.100	1	mg/L	36277		08/03/04 2122	dtn

* In Description = Dry Wgt.

H984

LABORATORY TEST RESULTS

Job Number: 207270

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON

PROJECT: URS-E #

ATTN: Sharon Excellent

Customer Sample ID: H984-549738 GZ-06
Date Sampled.....: 07/22/2004
Time Sampled.....: 11:35
Sample Matrix.....: Water

Laboratory Sample ID: 207270-2
Date Received.....: 08/03/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	ND	U		0.0600	1.00	10	mg/L	36277		08/04/04 1304	dtn

* In Description = Dry Wgt.

STL Edison

13

H984

STL Edison

LABORATORY TEST RESULTS

Job Number: 207270

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON PROJECT: URS-R H ATTN: Sharon Ercolani

Customer Sample ID: H984-549739 mw-04
Date Sampled. ....: 07/22/2004
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 207270-3
Date Received.....: 08/03/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	0.302			0.0060	0.100	1	mg/L	36277		08/03/04 2215	dtn

* In Description = Dry Wgt.

H984

LABORATORY TEST RESULTS

Job Number: 207270

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON PROJECT: URS-# H ATTN: Sharon Ercolani

Customer Sample ID: H984-549740
Date Sampled.....: 07/22/2004
Time Sampled.....: 14:20
Sample Matrix.....: Water

MW-07

Laboratory Sample ID: 207270-4
Date Received .....: 08/03/2004
Time Received... ...: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	0.190			0.0060	0.100	1	mg/L	36277		08/03/04 2228	dtn

* In Description = Dry Wgt.

STL Edison

15

H984

Job Number: 207270

LABORATORY TEST RESULTS

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON

PROJECT: URS-R II

ATTN: Sharon Ercoliani

Customer Sample ID: H984-549741
Date Sampled.....: 07/22/2004
Time Sampled. ....: 14:25
Sample Matrix.....: Water

Dup-1

Laboratory Sample ID: 207270-5
Date Received.....: 08/03/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	0.304			0.0060	0.100	1	mg/L	36277		08/03/04 2242	dtn

* In Description = Dry Wgt.

STL Edison

16

H984

Job Number: 207270

LABORATORY TEST RESULTS

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON

PROJECT: URS-R

ATTN: Sharon Excellent

Customer Sample ID: H984-549742
Date Sampled.....: 07/22/2004
Time Sampled.....: 15:18
Sample Matrix.. ..: Water

MW-02

Laboratory Sample ID: 207270-6
Date Received.....: 08/03/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DF	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	0.294			0.0060	0.100	1	mg/L	36277		08/03/04 2255	dtn

* In Description = Dry Wgt.

STL Edison

17

Client ID: Trip_Blank
Site: EMCA

Lab Sample No: 549781
Lab Job No: H991

Date Sampled: 07/23/04
Date Received: 07/24/04
Date Analyzed: 08/04/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7074.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	ND	5.0

Client ID: MW-06
Site· EMCA

Lab Sample No. 549782
Lab Job No: H991

Date Sampled: 07/23/04
Date Received: 07/24/04
Date Analyzed: 08/04/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7081.d

Matrix: WATER
Level. MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	40	5.0

Client ID: **MW-03**
Site: EMCA

Lab Sample No: **549783**
Lab Job No: H991

Date Sampled: 07/23/04
Date Received: 07/24/04
Date Analyzed: 08/05/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7107.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 50.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	2700	250

Client ID: MW-05
Site: EMCA

Lab Sample No: 549784
Lab Job No: H991

Date Sampled: 07/23/04
Date Received: 07/24/04
Date Analyzed: 08/05/04
GC Column: GS-Q
Instrument ID: VSCREEN3.i
Lab File ID: scrc7096.d

Matrix: WATER
Level: MED
Purge Volume: 10.0 ml
Final Volume: 0.0 mL
Dilution Factor: 1.0

METHANE, ETHANE, ETHENE
METHOD 3810

Parameter	Analytical Result Units: ug/l	Quantitation Limit Units: ug/l
Methane	47	5.0

Site: EMCA

Lab Job No: H991

Date Received: 07/24/2004
Matrix WATER

Date Sampled: 07/23/04
QA Batch. 2107

Chloride

STL Edison Sample #	Client ID	Date Analyzed	Dilution Factor	Analytical Result Units. mg/l
549782	MW-06	08/11/04	1 0	60.5
549783	MW-03	08/11/04	1 0	71.7
549784	MW-05	08/11/04	1 0	63 9

Quantitation Limit for Chloride is 5 0 mg/l

Site· EMCA

Lab Job No: H991

Date Received. 07/24/2004
Matrix WATER

Date Sampled. 07/23/04
QA Batch: 2043

Sulfate

STL Edison Sample #	Client ID	Date Analyzed	Dilution Factor	Analytical Result Units mg/l
549782	MW-06	08/13/04	2.0	33 5
549783	MW-03	08/13/04	1 0	ND
549784	MW-05	08/13/04	2 0	42 3

Quantitation Limit for Sulfate is 5.0 mg/l

Site. EMCA

Lab Job No. H991

Date Received. 07/24/2004
Matrix· WATER

Date Sampled 07/23/04
QA Batch: 1605

Sulfide

STL Edison Sample #	Client ID	Date Analyzed	Dilution Factor	Analytical Result Units mg/l
549782	MW-06	07/28/04	1 0	ND
549783	MW-03	07/28/04	1 0	ND
549784	MW-05	07/28/04	1 0	ND

Quantitation Limit for Sulfide is 1 0 mg/l

H991

STL Edison

LABORATORY TEST RESULTS

Job Number: 207277

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON PROJECT: URS-R.H ATTN: Sharon Freeliand

Customer Sample ID: H991-549782
Date Sampled.....: 07/23/2004
Time Sampled.....: 07:47
Sample Matrix.....: Water

MW-06

Laboratory Sample ID: 207277-1
Date Received.....: 07/31/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT		FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	0.467			0.0060	0.100	1	mg/L	36277		08/04/04 1757	dtn

* In Description = Dry Wgt.

L A B O R A T O R Y   T E S T   R E S U L T S

Job Number: 207277 | Date: 08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON | PROJECT: UNS-R.A | ATTN: Sharon Ercolini

Customer Sample ID: H991-549783
Date Sampled... ..: 07/23/2004
Time Sampled......: 08:45
Sample Matrix.....: Water

MW-03

Laboratory Sample ID: 207277-2
Date Received.......: 07/31/2004
Time Received.......: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Fluoride	0.397			0.0060	0.100	1	mg/L	36277		08/04/04 1810	dtn

* In Description = Dry Wgt.

H991

STL Edison

11

LABORATORY TEST RESULTS

Job Number: 207277

Date:08/05/2004

CUSTOMER: SEVERN TRENT LABORATORIES-EDISON PROJECT: URS-# H ATTN: Sharon Ercolani

Customer Sample ID: H991-549784
Date Sampled.....: 07/23/2004
Time Sampled.....: 09:40
Sample Matrix.....: Water

MW-05

Laboratory Sample ID: 207277-3
Date Received.....: 07/31/2004
Time Received.....: 10:30

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	PF	DATE/TIME	TECH
300.0	Ion Chromatography Analysis Fluoride	0.103			0.0060	0.100	1	mg/L	36277		08/04/04 1824	dtn

* In Description = Dry Wgt.

ATTACHMENT B

SUPPORT DOCUMENTATION

Peter Fairbanks
09/10/2004 02 43 PM

To rmacieira@stl-inc com
cc
Subject EMCA - Data Review Comments for SDG Nos H984, H9845, and H991

Rui,

Please address the following data review questions and submit the requested information to the URS Corporation (Buffalo, NY Office - please note new address below) by September 14, 2004, so that the data review may be completed

A SDG No H9845

1 The lab did not include a COC for samples collected on 07/23/04 Please submit

2 The MDL study for Freon-113 performed on 01/28/04 indicates the units are in ug/kg Please submit an aqueous MDL for Freon-113

3 Please submit a Form VII VOA-2 for the CCAL analyzed on 07/30/04

B SDG No H991

1 The COC was not signed and dated by the laboratory upon sample receipt Please explain and submit proper documentation so the date of sample receipt can be verified

2 Please submit method blank results for methane for file CG217

Peter R Fairbanks
Senior Chemist
URS Corporation
77 Goodell Street
Buffalo, New York 14203
Tel 716 856 5636, ext 1121
Fax 716 856 2545

"Macieira, Rui"
<rmacieira@stl-inc com>

To <peter_fairbanks@urscorp com>
cc
Subject EMCA Report

09/24/2004 09 36 AM

Good Morning,

Attached are responses to the data review questions / concerns
<<h9845-1 pdf>> <<h9845-2 pdf>> <<H9845-3 pdf>> <<h991-2 pdf>> <<k991-1 pdf>>

Please let me know if any additional information is needed

Thanks,
Rui

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H9845-3 pdf

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H98450

CHAIN OF CUSTODY RECORD

LH984 1

URS

PROJECT NO	11173570.00000
SITE NAME	ROHM & HAAS; FORMER ERCA SITE
SAMPLERS (PRINT/SIGNATURE)	ERIC LOVENDUSKI / EJ Lovenduski
DELIVERY SERVICE	FED EX
AIRBILL NO	8467 7629 2887
LAB	STL EDISON
COOLER	1 of 1
PAGE	1 of 1

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO # OF CONTAINERS	TESTS: Methane	TESTS: Total Sulfide	TESTS: Chloride, Sulfate, Fluoride	BOTTLE TYPE AND PRESERVATIVE: w/ HCl	BOTTLE TYPE AND PRESERVATIVE: 40 ml glass vial w/ HCl	BOTTLE TYPE AND PRESERVATIVE: 500 ml poly w/ NaOH, Zn Acetate	BOTTLE TYPE AND PRESERVATIVE: 500 ml poly unpres.	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO # (ERPIMS)
TRIP BLANK	7/22/04	—	GRAB	TB1-7/22/04	TB	2				x	x							
EQUIPMENT BLANK	7/22/04	1100	GRAB	EB1-7/22/04	WG	6				2	2	1	1	549736	EB1	—	—	
GZ-06	7/22/04	1125	GRAB	GZ-06 7/22/04	WG	8				3	3	1	1	737	RB1	—	—	
GZ-06	7/22/04	1135	GRAB	GZ-06 7/22/04 MS	WG	8				3	3	1	1		N1	—	—	
GZ-06	7/22/04	1135	GRAB	GZ-06 7/22/04 MSD	WG	8				3	3	1	1	549738	MS1	—	—	
MW-04	7/22/04	1330	GRAB	MW-04 7/22/04	WG	8				3	3	1	1		SD1	—	—	
MW-07	7/22/04	1420	GRAB	MW-07 7/22/04	WG	8				3	3	1	1	549739	N1	—	—	
DUPLICATE	7/22/04	—	GRAB	DUP1-7/22/04	WG	8				3	3	1	1	740	N1	—	—	
MW-02	7/22/04	1518	GRAB	MW-02-7/22/04	WG	8				3	3	1	1	741	FR1	—	—	
														742				

MATRIX CODES: AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO SOIL; DC DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH HAZARDOUS LIQUID WASTE; LF FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES: TB# TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# FIELD REPLICATE; N# NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE

(# SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
EJ Lovenduski	7/22/04	1600	FEDEX		
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME
FEDEX			Dan Quinn	7/23/04	1015

SPECIAL INSTRUCTIONS: Call w/ Questions-1-716-856-5636-Attn Fairbanks

Samples shipped on ice

Distribution. Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/CollCR/GCM

STL Edison

16

H984

PLEASE RAD SCREEN

1.8 UC

STL Edison
777 New Durham Road
Edison, New Jersey 08817
Phone (732) 549-3900 Fax (732) 549-3679

CHAIN OF CUSTODY / ANALYSIS REQUEST

Name (for report and invoice) Sharon Ercoliani	Samplers Name (Printed)	Job H984	
Company STL Edison	P O #	Site URS - R&H	
Address 777 New Durham Road		State NJ	
City Edison / State NJ / Zip 08817	Analysis Turnaround Time Standard ☐	Deliv Reduced - Haz Site EDD	
Phone 732-549-3900 / Fax 732-549-3679	Rush Charges Authorized For ☐ ☒ Hard copy by 8/16/04 ☐	ANALYSIS REQUESTED (ENTER "X" BELOW TH	LAB USE ONLY Project No / Job No / Sample Numbers

Sample Identification	Date	Time	Matrix	No of Cont	Fluoride EPA 300
(G1) H984-549737	7/22/2004	11 00	AQ	1	X
(G) H984-549738	7/22/2004	11 35	AQ	1	X
(G3) H984-549739	7/22/2004	13 30	AQ	1	X
(G4) H984-549740	7/22/2004	14.20	AQ	1	X
(G5) H984-549741	7/22/2004	14 20	AQ	1	X
(GW) H984-549742	7/22/2004	15 18	AQ	1	X

207270 08/15/2004
SEVERN TRENT LABORATORIES-EDISON
SHARON ERCOLIANI

Preservation Used 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other _____, 7 = Other _____

Soil
Water 1

Special Instructions.

Water Metals Filtered (Yes/No)? _____

Relinquished by	Company	Date / Time	Received by	Company
1)	STL Edison	7/29/04 1700	1)	
Relinquished by 2)	Company	Date / Time	Received by 2)	Company STL CT 7/30/04 10:30
Subcontracted to STL Connecticut 128 Long Hill Cross Road Shelton, CT 06484				

08/03/04

STL Edison

13

90

TT T T

CHAIN OF COUSTODY RECORD

URS

PROJECT NO 11173570.00000

SITE NAME ROHM&HAAS; FORMER ERA SITE

SAMPLERS (PRINT/SIGNATURE) ERIC LOVENDUSKI / [signature]

DELIVERY SERVICE FED EX AIRBILL NO. 8457 7629 3000

LAB STL EDISON

COOLER 1 of 1

PAGE 1 of 1

TESTS: Freon 113, Freon 1336, Freon 1113 | Methane | Total Sulfide | Chloride, Sulfate, Chloride

BOTTLE TYPE AND PRESERVATIVE: 40ml glass vial w/ HCl | 40ml glass vial w/ HCl | 500ml poly w/ NaOH Zn Acetate | 500ml poly unpres.

LOCATION IDENTIFIER	DATE	TIME	COMP/GRAB	SAMPLE ID	MATRIX	TOTAL NO # OF CONTAINERS	40ml glass vial w/ HCl	40ml glass vial w/ HCl	500ml poly w/ NaOH Zn Acetate	500ml poly unpres.					REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO # (ERPIMS)
TRIP BLANK	7/23/04	—	GRAB	TB1-7/23/04	[illegible]C	2	1	1					549781			TB1	X	X	
MW-06	7/23/04	0747	GRAB	MW-06 7/23/04	WG	8	3	3	1	1			782			N1	X	X	
MW-03	7/23/04	0845	GRAB	MW-03 7/23/04	WG	8	3	3	1	1			783			N1	X	X	
MW-05	7/23/04	0940	GRAB	MW-05 7/23/04	WG	8	3	3	1	1			784			N1	X	X	

[illegible] 07/26/04

MATRIX CODES: AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES: TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
[signature]	7/23/04	1130			

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME

SPECIAL INSTRUCTIONS

Call w/questions: 1-716-856-5636 Peter Fairbanks

Samples Shipped on Ice

Distribution Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/CoCR/GCM

STL Edison
777 New Durham Road
Edison, New Jersey 08817
Phone (732) 549-3900 Fax. (732) 549-3679

PASSED RAD SCREEN No 1.0

CHAIN OF CUSTODY / ANALYSIS REQUEST

PAGE 1 OF 1

Name (for report and invoice): Sharon Ercoliani	Samplers Name (Printed)
Company: STL Edison	PO #
Address: 777 New Durham Road	Analysis Turnaround Time: Standard ☐
City: Edison; State: NJ; Zip: 08817	Rush Charges Authorized For ☐
Phone: 732-549-3900; Fax: 732-549-3679	☒ Hard copy by 8/17/04 ☐

Job: H991
Site: URS - R&H
State: NJ
Deliv.: Reduced - Haz Site EDD

ANALYSIS REQUESTED (ENTER "X" BELOW)

LAB USE ONLY: Project No: Job No: Sample Numbers:

Sample Identification	Date	Time	Matrix	No of. Cont.	Fluoride EPA 300
H991-549782	7/23/2004	7:47	AQ	1	X
H991-549783	7/23/2004	8:45	AQ	1	X
* H991-549784	7/23/2004	9:40	AQ	1	X

207277
SEVERN TRENT LABORATORIES-EDISON
SHARON ERCOLIANI
08/12/2004

Preservation Used 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other ______, 7 = Other ______

Soil:
Water: 1

Special Instructions: * Spl # 549784 will be sent by week end.

Water Metals Filtered (Yes/No)?

Relinquished by	Company	Date / Time	Received by	Company
1) [signature]	STL Edison	7/29/04 1700 hrs	1)	
2)			2) K. Blackburn	STL CT 7/31/04 10:30

Subcontracted to
STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484

INTERNAL CUSTODY RECORD
AND
LABORATORY CHRONICLE
STL Edison

777 New Durham Road, Edison, New Jersey
08817

Job No: H991 **Site** EMCA

Client URS Greiner-NY

VOAGC

8810

Lab Sample ID	Date Sampled	Date Received	Preparation Date	Technician's Name	Analysis Date	Analyst's Name	QA Batch
WATER							
549781	7/23/2004	7/24/2004			8/4/2004	Yip, Ming	0866
549782	7/23/2004	7/24/2004			8/4/2004	Yip, Ming	0866
549783	7/23/2004	7/24/2004			8/5/2004	Yip, Ming	0866
549784	7/23/2004	7/24/2004			8/5/2004	Yip, Ming	0866

FedEx. emp# 214005 23JUL04

PRIORITY SAT

TRK# 8467 7629 3000 FORM 0215

De 24

08817 -NJ -US

EWR

E1 LDJA

7/24 1052

62

200

FedEx. Express US Airbill

FedEx Tracking Number 8467 7629 3000

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records.

Date 7/23/04 FedEx Tracking Number 846776293000

Sender's Name Eric Lovendusk. Phone 518 688-0015

Company URS CORP

Address 28 CORPORATE DR STE 200

City CLIFTON PARK State NY ZIP 12065-8662

2 Your Internal Billing Reference 11173570.00000

3 To Recipient's Name RECEIVING Phone 732 549-3900

Company STL EDISON

Recipient's Address
We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address 777 NEW DURHAM ROAD
To request a package be held at a specific FedEx location, print FedEx address here.

City EDISON State NJ ZIP 08817

8467 7629 3000

0277726791

4a Express Package Service

[X] FedEx Priority Overnight

[ ] FedEx 2Day

[ ] FedEx Express Saver

4b Express Freight Service

[ ] FedEx 1Day Freight*

[ ] FedEx 2Day Freight

[ ] FedEx 3Day Freight

5 Packaging

[ ] FedEx Envelope

[ ] FedEx Pak*

[ ] FedEx Box

[ ] FedEx Tube

[X] Other

6 Special Handling

[X] SATURDAY Delivery

Does this shipment contain dangerous goods?
One box must be checked.

[X] No

[ ] Yes As per attached Shipper's Declaration

[ ] Yes Shipper's Declaration not required

[ ] Dry Ice

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

[ ] Sender

[X] Recipient

[ ] Third Party

[ ] Credit Card

[redacted] 23 [redacted]

Total Packages 1

Total Weight 22

[redacted]

Total Charges

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the FedEx Service Guide for details.

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.
Questions? Visit our Web site at fedex.com
or call 1.800.GoFedEx 1.800.463.3339.

466

ALIGN OPEN END OF FEDEX AIRBILL POUCH HERE

Track Shipments
Detailed Results

Printable Version | Quick Help

Tracking number	846776293000	**Reference**	11173570 00000
Signed for by	F BARRETT	**Delivery location**	EDISON, NJ
Ship date	Jul 23, 2004	**Delivered to**	Receptionist/Front Desk
Delivery date	Jul 24, 2004 10 48 AM	**Service type**	Priority Overnight
		Weight	32 0 lbs
Status	Delivered		

You can also track
- FedEx Trad shipments
- By Email Tr
- By FedEx V Solutions

Date/Time		Activity	Location	Details
Jul 24, 2004	10 48 AM	**Delivered**	EDISON, NJ	
	9 37 AM	On FedEx vehicle for delivery	EDISON, NJ	
	9 27 AM	At local FedEx facility	EDISON, NJ	
	12 19 AM	In transit	MEMPHIS, TN	
Jul 23, 2004	9 37 PM	Left origin	STAMFORD, CT	
	6 47 PM	Package data transmitted to FedEx		
	11 27 AM	Picked up	STAMFORD, CT	

Wrong Address?
Reduce future mistal
FedEx Address Chec

Shipping Freight?
FedEx has LTL, air surface and air exp multi piece packag and ocean freight

Signature proof | Track more shipments

Email your detailed tracking results (optional)

Enter your email, submit up to three email addresses (separated by commas), add your message (optional), and click **Send email**

From

To

Add a message to this email

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FedEx Express
Customer Support Trace
3875 Airways Boulevard
Module H, 4th Floor
Memphis, TN 38116

U S Mail PO Box 727
Memphis, TN 38194-4643

Telephone 901-369-3600

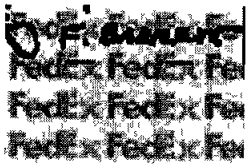
09/21/2004

Dear Customer

Here is the proof of delivery for the shipment with tracking number **846776293000** Our records reflect the following information

Delivery Information

Signed for by F BARRETT



Delivery Location 777 NEW DURHAM RD
Delivery Date Jul 24, 2004 10 48

Shipping Information

Tracking number 846776293000

Ship Date Jul 23, 2004
Weight 32 0 lbs

Recipient
RECEIVING
777 NEW DURHAM RD
EDISON , NJ 08817
US

Shipper
ERIC L
URS CORP
28 CORPORATE DR STE 200
CLIFTON PARK , NY 120658662
US

Reference 11173570 00000

Thank you for choosing FedEx Express We look forward to working with you in the future

FedEx Worldwide Customer Service
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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.. N/A SDG No : H9845

Lab File ID: B32683 BFB Injection Date: 07/30/04

Instrument ID. XVOAMS2 BFB Injection Time. 1503

GC Column· DB624 ID 0.53 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	20.4
75	30.0 - 66.0% of mass 95	48.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50 0 - 120.0% of mass 95	83 1
175	4 0 - 9.0% of mass 174	6 4 (7 6)1
176	93.0 - 101.0% of mass 174	81.5 (98 0)1
177	5.0 - 9.0% of mass 176	5.9 (7.2)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		BSTD212	B32684	07/30/04	1519
02	VBLKBV212	VBLKBV212	B32685	07/30/04	1553
03	EB1	549737	B32686	07/30/04	1620
04	GZ06MS	549738MS	B32688	07/30/04	1714
05	GZ06MSD	549738MSD	B32689	07/30/04	1742
06	MW-04	549739	B32690	07/30/04	1809
07	MW-07	549740	B32691	07/30/04	1836
08	MW-02	549742	B32693	07/30/04	1930
09	TRIP_BLANK	549781	B32694	07/30/04	1958
10	MW-06	549782	B32695	07/30/04	2025
11	MW-03	549783	B32696	07/30/04	2052
12	MW-05	549784	B32697	07/30/04	2119
13	GZ06	549738	B32698	07/30/04	2146
14	DUP1	549741	B32699	07/30/04	2213
15	VHH9845	VHH9845	B32700	07/30/04	2240
16					
17					
18					
19					
20					
21					
22					

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: STL EDISON Contract: N/A

Lab Code: N/A Case No.: N/A SAS No : N/A SDG No : H9845

Instrument ID: XVOAMS2

Calibration Date. 07/30/04 Time· 1519

Lab File ID: B32684

Init. Calib. Date(s): 07/29/04 07/29/04

EPA Sample No.(VSTD050##):

Init. Calib. Times: 1058 1257

Heated Purge: (Y/N) N

GC Column: DB624 ID 0 53 (mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	1.359	1.738		27.9	
Chloromethane	1 191	0 959		-19.5	
Vinyl Chloride	1.135	1.014	0.100	-10 7	25.0
Bromomethane	1 002	0 813	0.100	-18.9	25.0
Chloroethane	0.583	0.546		-6.3	
Trichlorofluoromethane	2.545	2.830		11.2	
1,1-Dichloroethene	1.186	1.166	0.100	-1.7	25.0
112-Trichlorotrifluoroethane	2.090	3.032		45 1	
Acetone	0.268	0.303		13.0	
Carbon Disulfide	2.478	2.566		3.6	
Methyl Acetate	0.559	0.584		4 5	
Methylene Chloride	1.160	1 192		2.8	
trans-1,2-Dichloroethene	1.176	1.278		8.7	
Methyl tert-Butyl Ether	1.315	2.031		54.4	
1,1-Dichloroethane	2.244	2 202	0.200	-1.9	25.0
cis-1,2-Dichloroethene	1.403	1.413		0.7	
2-Butanone	0 326	0.356		9 2	
Chloroform	2.511	2 518	0.200	0.3	25.0
1,1,1-Trichloroethane	0.621	0.702	0.100	13.0	25.0
Cyclohexane	0.365	0.469		28.5	
Carbon Tetrachloride	0.588	0.693	0.100	17.8	25.0
Benzene	0.836	0.798	0 500	-4.5	25.0
1,2-Dichloroethane	1.538	1.508	0.100	-2 0	25.0
Trichloroethene	0.487	0.430	0.300	-11 7	25.0
Methylcyclohexane	0.358	0.512		43.0	

All other compounds must meet a minimum RRF of 0.010

FORM VII VOA-1 OLM04.2