QUARTERLY OPERATING REPORT
JANUARY-MARCH 2000

WORK ASSIGNMENT D003825-14

FORT EDWARD LANDFILL
FORT EDWARD (T)

SITE NO. 5-58-001
WASHINGTON (C), NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York

John P. Cahill, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Corporation Group Consultants
282 Delaware Avenue
Buffalo, New York 14202

G3125

April 2001

QUARTERLY REPORT OF OPERATIONS

JANUARY 1 TO MARCH 31, 2000

FOR THE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WORK ASSIGNMENT NO. D003825-14

FORT EDWARD LANDFILL
NYSDEC SITE NO. 5-58-001
FORT EDWARD (T), WASHINGTON (C), NEW YORK

SUBMITTED BY:
URS CORPORATION GROUP CONSULTANTS
282 DELAWARE AVENUE
BUFFALO, NEW YORK 14202

APRIL 2001

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

This report summarizes the long-term operation and maintenance (O&M) activities at the Fort Edward Landfill for the period from January 1 to March 31, 2000. The Fort Edward Landfill is a Class 2 Inactive Hazardous Waste Site (No. 5-58-001) located in the Town of Fort Edward, Washington County. The O&M services for this project will be provided for a period of 18 months with system operation reports being submitted on a quarterly basis. This is the fourth of six scheduled quarterly reports under this work assignment.

The Fort Edward Landfill remediation consists of a final cover system over the landfill, a leachate/groundwater collection system, a landfill gas collection trench, and a groundwater/leachate treatment system; including a pretreatment building and a constructed wetland treatment system (CWTS) with three cells. Refer to Figure 1 for a schematic of the process.

The air stripper was installed to remove volatile organic compounds (VOCs) from the water. During the start-up period, however, it became apparent that the air stripper was not needed, since the concentrations of VOCs in the influent were below the discharge criteria. As a result, the air stripper is not currently being used.

Also, the deposit control chemical FeREMEDE® is added to the incoming water to keep the iron in solution, thereby preventing it from depositing and fouling the system.

Mitkem Corporation provided analytical services for the first of eight weekly sampling events and the first round (year 1) of groundwater and surface water sampling. On May 14, 1999, the Department requested that URS Corporation Group Consultants (URS) utilize the New York State Department of Health (NYSDOH) laboratory for all analytical services after June 1, 1999. All analytical results included in this report are from the NYSDOH laboratory.

2.0 PROCESS MONITORING

Process monitoring includes physical measurements of process parameters. Measurements for this remediation system include flow rates and water levels. The flow rates are measured at five (5) locations, and the water levels are measured at eight (8) locations (Figure 1). Measurements for the period are summarized in Table 1.

3.0 PERFORMANCE MONITORING

Performance monitoring included water sampling and analysis at two (2) locations (SL-1 and SL-6 on Figure 1). The analytical results are utilized to evaluate the progress of the remediation at the site.

The samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs) by NYSDEC ASP Method 95-1 and site-specific target analyte list (TAL) metals by NYSDEC ASP Methods CLP-M. Each effluent sample was also analyzed for total dissolved solids by Standard Method SM2540C, total suspended solids by SM2540D, total phenols by SM5530B and pH by SM4500H.

System influent (SL-1) and effluent (SL-6) results for all detected analytes are summarized in Table 2 (VOCs) and Table 3 (Metals). The data for total dissolved solids (TDS), total suspended solids (TSS), total phenols and pH, of the effluent samples, are summarized in Table 4. Analytical results are included in Appendix A.

During this operating period, the discharge criterion (500 mg/l) for total dissolved solids (TDS) was exceeded in the effluent sample for February (595 mg/l). The average TDS concentration for this period (409 mg/l) is less than last period (535 mg/l). The TDS discharge criterion was met for January (484 mg/l) and March (150 mg/l).

Iron exceeded discharge criteria for all three sampling events. Cobalt exceeded discharge criteria in January and zinc in February. The zinc exceedance was an unusual event (this was the first exceedance ever recorded) and no cause was determined.

In general, effluent quality has remained stable based on data from this report compared to the previous monitoring period.

4.0 GROUNDWATER MONITORING

Samples are scheduled to be collected and analyzed from the network of groundwater monitoring wells twice per year (Figure 2). Samples were not collected during this reporting period. The next scheduled groundwater sampling event is May 2000.

5.0 SURFACE WATER MONITORING

Sampling and analysis of the Glens Falls Feeder Canal and the small tributaries flowing from the landfill to the Feeder Canal are performed twice a year to assess the effect of the remediation on surface water quality.

Samples were not collected during this reporting period. The next scheduled sampling event is May 2000.

6.0 GAS MONITORING

Gas monitoring at the gas vents (both before and after the carbon canister), gas monitoring piezometers, and the landfill perimeter is scheduled to be performed twice a year (Figure 2). Gas monitoring was not performed during this reporting period. The next scheduled sampling event is May 2000.

7.0 MAINTENANCE AND REPAIR

The remediation system operated efficiently and as expected throughout this period. Maintenance and repair activities occurring during this reporting period are summarized below.

In January:

- The force main from the effluent collection sump to the effluent collection pond was repaired and cleaned.

- The FeREMEDE® drum was replaced.

In March:

- All submersible pumps were removed and inspected and found to be clean and in working order.

- All flow sensors were found to be biofouled, cleaned, inspected, and returned to working order.

- The force main from the effluent collection sump was found to be plugged and was cleaned.

TABLE 1
PROCESS MONITORING SUMMARY

MONITORING LOCATION		PARAMETER	JANUARY 2000	FEBRUARY 2000	MARCH 2000
W1	PM-1	Level (ft of H_2O)	5.3	6.4	6.7
W2	PM-2	Level (ft of H_2O)	10.3	8.3	12.3
W3	PM-3	Level (ft of H_2O)	8.8	10.2	12.3
W4	PM-4	Level (ft of H_2O)	4.7	4.7	4.7
Cell 1 sensors	PM-5	Level (ft of H_2O)	2.2 - 2.4	2.0 - 2.3	2.1 - 2.3
Cell 2 —	PM-6	Level (ft of H_2O)	2.2 - 2.3	2.2	2.2
Cell 3 —	PM-7	Level (ft of H_2O)	2.5 - 2.6	2.4 - 2.6	2.4 - 2.6
W5	PM-8	Level (ft of H_2O)	NM	4.7	NM
Flowmeter into Bldg	PM-9	Flow (gpm) [1]	16	9.9	----
201	PM-10	Flow (gpm) [1]	7.95	7.5	----
202	PM-11	Flow (gpm) [1]	8.58	6.8	----
203	PM-12	Flow (gpm) [1]	11.60	12.4	----
204	PM-13	Flow (gpm) [1],[2]	12.51	10.2	----

Notes:

(1) Flow rates are intermittent. Total flows are not available because the flow indicators are not equipped with totalizers.

(2) The fourth pump, which is common to all three cells, discharged to cell #1 during this three-month period.

NM indicates that no measurement was taken

No flow data was recorded for March due to biofouling of the flowmeters

TABLE 2
VOLATILE ORGANIC COMPOUNDS (VOCs)
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (μg/l)	CONCENTRATION (μg/l)	CONCENTRATION (μg/l)
	Discharge Criteria,	January 2000	February 2000	March 2000
Contaminant		12th	22nd	28th
	(μg/l)	I : E	I : E	I : E
Vinyl Chloride	50	ND:ND	ND:ND	ND:ND
1,2 Dichloroethene	30	8:ND	ND:ND	ND:ND
Benzene	10	2:ND	6:ND	ND:ND
Chlorobenzene	10	2:ND	1:ND	0.9:ND
Chloroethane	20	2:ND	ND:ND	ND:ND
Ethylbenzene	10	0.7:ND	2:ND	ND:ND
Toluene	10	1:ND	2:0.08B	ND:ND
Total Xylenes	10	6:ND	8:0.1B	0.6:ND
Methylene Chloride	50	0.3B:0.2B	ND:0.2B	ND:0.1B
1,1 Dichloroethane	30	ND:ND	ND:ND	ND:ND
Methyl Ethylketone	NV	ND:ND	ND:ND	7:ND

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

B = Blank Contamination

Only detected analytes are included.

Shaded area indicates result exceeds standard.

TABLE 3 – METALS
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (μg/l)	CONCENTRATION (μg/l)	CONCENTRATION (μg/l)
	Discharge Criteria (μg/l)	**January 2000**	**February 2000**	**March 2000**
Contaminant		**12th**	**22nd**	**28th**
		I : E	**I : E**	**I : E**
Barium	3500	27:99	98:51	83:25
Calcium	NV	36.1*:103*	117*:124*	107*:34.2*
Cobalt	5	7 :8	7:5	7:ND
Iron	300	15.4* :7.69*	41.6* :339	31* :467
Magnesium	NV	26.1*:20.3*	32.5*:48.8*	26.5*:8.3*
Manganese	NV	2.7*:1.76*	2.3*:1.33*	2.9*:289
Nickel	9.6	ND:8	10:7	ND:ND
Potassium	NV	5.5*:5.2*	10.9*:1.9*	ND:ND
Sodium	NV	51.3*:30.4*	70.5*:44.*	52*:8*
Zinc	170	13:ND	23 :201	13:ND

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

* = Multiply by 1,000

B = Blank Contamination

Only detected analytes are included.

Shading indicates result exceeds standard

TABLE 4
SUMMARY OF ADDITIONAL ANALYTICAL RESULTS FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (mg/l)	CONCENTRATION (mg/l)	CONCENTRATION (mg/l)
	Discharge Criteria	January 2000	February 2000	March 2000
Contaminant		12th	22nd	28th
		E	E	E
Total Dissolved Solids	500 mg/l	478	604	140
Total Suspended Solids	50 mg/l	39	1	4
Total Phenols	0.008 mg/l	0.004	0.002	0.004
pH	6.0 - 9.0	7.3	NA	NA

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

B = Blank Contamination

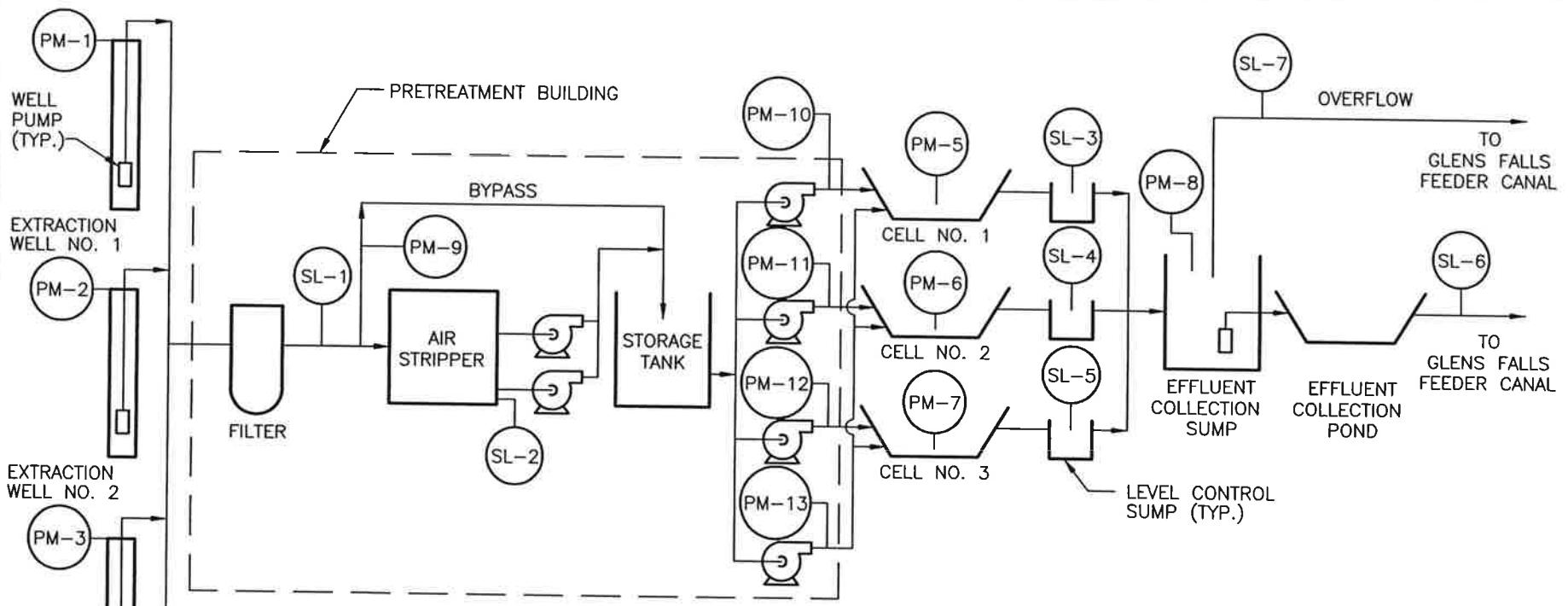
Shading indicates result exceeds standard

Only detected analytes are included.

Shaded area indicates result exceeds standard.

AC-13828

35505\CAD\ 1=1 1/21/00-3 EFH



PROCESS MONITORING LOCATION KEY

PM-1 = LEVEL EXT. WELL NO. 1
PM-2 = LEVEL EXT. WELL NO. 2
PM-3 = LEVEL EXT. WELL NO. 3
PM-4 = LEVEL COLLECTION TRENCH SUMP
PM-5 = LEVEL CELL 1
PM-6 = LEVEL CELL 2
PM-7 = LEVEL CELL 3
PM-8 = LEVEL EFFLUENT COLLECTION SUMP
PM-9 = BYPASS FLOW
PM-10 = DISCHARGE FLOW TO CELL 1
PM-11 = DISCHARGE FLOW TO CELL 2
PM-12 = DISCHARGE FLOW TO CELL 3
PM-13 = DISCHARGE FLOW TO EITHER CELL 1, CELL 2 OR CELL 3

SAMPLE LOCATION KEY

SL-1 = AST INFLUENT
SL-2 = AS EFFLUENT
SL-3 = CELL 1 EFF
SL-4 = CELL 2 EFF
SL-5 = CELL 3 EFF
SL-6 = POND EFF
SL-7 = OVERFLOW

LEGEND

(PM) PROCESS MONITORING LOCATION

(SL) SAMPLE LOCATION

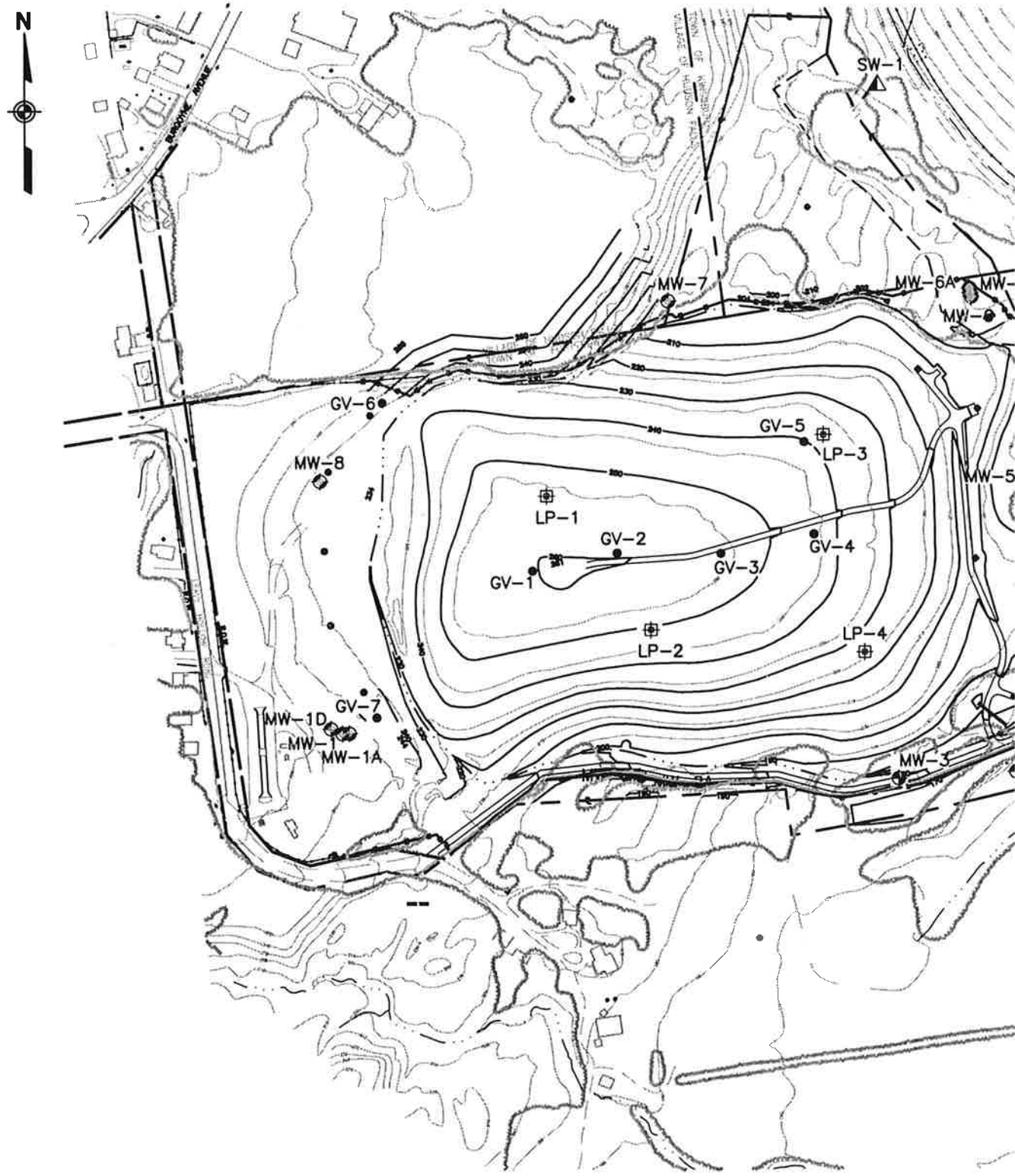
PUMP

URS CONSULTANTS, INC.

SAMPLE AND PROCESS MONITORING LOCATIONS

FIGURE 1

J:\35505\CAD\ 1=300 3/22/00-1 WOP



NOTE:
BASE MAPPING FOR THIS DI
FORT EDWARD LANDFILL REI

CC-5597B

APPENDIX A

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		01/12/2000	01/12/2000	02/22/2000	02/22/2000	03/28/2000	03/28/2000
Parameter	Units		DUP		DUP		DUP
Volatiles							
1,1,1-Trichloroethane	UG/L	10 U	NA	10 U	NA	10 U	NA
1,1,2,2-Tetrachloroethane	UG/L	10 U	NA	10 U	NA	10 U	NA
1,1,2-Trichloroethane	UG/L	10 U	NA	10 U	NA	10 U	NA
1,1-Dichloroethane	UG/L	10 U	NA	10 U	NA	10 U	NA
1,1-Dichloroethene	UG/L	10 U	NA	10 U	NA	10 U	NA
1,2-Dichloroethane	UG/L	10 U	NA	10 U	NA	10 U	NA
1,2-Dichloroethene (total)	UG/L	1 J	NA	10 U	NA	10 U	NA
1,2-Dichloropropane	UG/L	10 U	NA	10 U	NA	10 U	NA
2-Hexanone	UG/L	10 U	NA	10 U	NA	10 U	NA
4-Methyl-2-Pentanone	UG/L	10 U	NA	10 U	NA	10 U	NA
Acetone	UG/L	10 U	NA	10 U	NA	10 U	NA
Benzene	UG/L	10 U	NA	10 U	NA	10 U	NA
Bromodichloromethane	UG/L	10 U	NA	10 U	NA	10 U	NA
Bromoform	UG/L	10 U	NA	10 U	NA	10 U	NA
Bromomethane	UG/L	10 U	NA	10 U	NA	10 U	NA
Carbon Disulfide	UG/L	10 U	NA	10 U	NA	10 U	NA
Carbon Tetrachloride	UG/L	10 U	NA	10 U	NA	10 U	NA
Chlorobenzene	UG/L	10 U	NA	10 U	NA	10 U	NA
Chloroethane	UG/L	10 U	NA	10 U	NA	10 U	NA
Chloroform	UG/L	10 U	NA	10 U	NA	10 U	NA
Chloromethane	UG/L	10 U	NA	10 U	NA	10 U	NA
Dibromochloromethane	UG/L	10 U	NA	10 U	NA	10 U	NA
Ethylbenzene	UG/L	10 U	NA	10 U	NA	10 U	NA
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	NA	10 U	NA	10 U	NA
Methylene Chloride	UG/L	10 U	NA	10 U	NA	10 U	NA
Styrene	UG/L	10 U	NA	10 U	NA	10 U	NA
Tetrachloroethene	UG/L	10 U	NA	10 U	NA	10 U	NA
Toluene	UG/L	10 U	NA	10 U	NA	10 U	NA
Total Xylenes	UG/L	0.1 J	NA	10 U	NA	10 U	NA
Trichloroethene	UG/L	10 U	NA	10 U	NA	10 U	NA
Vinyl Chloride	UG/L	10 U	NA	10 U	NA	10 U	NA
cis-1,3-Dichloropropene	UG/L	10 U	NA	10 U	NA	10 U	NA
trans-1,3-Dichloropropene	UG/L	10 U	NA	10 U	NA	10 U	NA

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		01/12/2000	01/12/2000	02/22/2000	02/22/2000	03/28/2000	03/28/2000
Parameter	Units		DUP		DUP		DUP
PCB							
Aroclor 1221	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1016 /1242	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1248	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1254	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1260	UG/L	NA	NA	0.05 U	NA	NA	NA

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		01/12/2000	01/12/2000	02/22/2000	02/22/2000	03/28/2000	03/28/2000
Parameter	Units		DUP		DUP		DUP
Metals							
Aluminum	UG/L	399	404	41.0	34.0	49.0	60.0
Antimony	UG/L	75.0 U	75.0 U	75.0 U	75.0 U	75.0 U	75.0 U
Arsenic	UG/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Barium	UG/L	99.0	97.0	51.0	52.0	25.0	27.0
Beryllium	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	UG/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Calcium	UG/L	103000	105000	124000	128000	34200	36100
Chromium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	UG/L	8.0	9.0	5.0	5.0 U	5.0 U	5.0 U
Copper	UG/L	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Iron	UG/L	7690	7770	339	316	467	503
Lead	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Magnesium	UG/L	20300	20500	48800	50000	8300	8700
Manganese	UG/L	1760	1770	1330	1350	289	304
Mercury	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	UG/L	8.0	10.0	7.0	10.0	5.0 U	5.0 U
Potassium	UG/L	5200	5200	1900	2000	1100	1200
Selenium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	UG/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Sodium	UG/L	30400	30300	44000	44900	8000	8400
Thallium	UG/L	75.0 U	75.0 U	75.0 U	75.0 U	75.0 U	75.0 U
Vanadium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Zinc	UG/L	10.0 U	10.0 U	201	206	10.0 U	10.0 U
Molybdenum	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Strontium	UG/L	429	433	603	618	151	160
Tin	UG/L	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
Titanium	UG/L	15.0	15.0	5.0 U	5.0 U	5.0 U	5.0 U

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		01/12/2000	01/12/2000	02/22/2000	02/22/2000	03/28/2000	03/28/2000
Parameter	Units		DUP		DUP		DUP
MISC							
Total Dissolved Solids	MG/L	478	484	604	595	140	150
Total Phenols	MG/L	0.004	0.004	0.002	0.001	0.004	0.004
Total Suspended Solids	MG/L	44	39	3	1	4	5

MADE BY:_____DATE:_____
CHKD. BY:_____DATE:_____

J:\35505\DB\PROGRAM\RES.DBF(res6.frx,PRINT6.PRG)
03/27/2001

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_INFLUENT	AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water	Water
Date Sampled		01/12/2000	02/22/2000	03/28/2000
Parameter	Units			
Volatiles				
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	8 J	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U
Benzene	UG/L	2 J	6 J	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U
Chlorobenzene	UG/L	2 J	1 J	0.9 J
Chloroethane	UG/L	2 J	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U
Chloromethane	UG/L	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U
Ethylbenzene	UG/L	0.7 J	2 J	10 U
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	10 U	10 U
Methylene Chloride	UG/L	0.3 BJ	10 U	10 U
Styrene	UG/L	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U
Toluene	UG/L	1 J	2 J	10 U
Total Xylenes	UG/L	6 J	8 J	0.6 J
Trichloroethene	UG/L	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	2 J	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_INFLUENT	AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water	Water
Date Sampled		01/12/2000	02/22/2000	03/28/2000
Parameter	Units			
PCB				
Aroclor 1221	UG/L	NA	NA	NA
Aroclor 1016 /1242	UG/L	NA	NA	NA
Aroclor 1248	UG/L	NA	NA	NA
Aroclor 1254	UG/L	NA	NA	NA
Aroclor 1260	UG/L	NA	NA	NA

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_INFLUENT	AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water	Water
Date Sampled		01/12/2000	02/22/2000	03/28/2000
Parameter	Units			
Metals				
Aluminum	UG/L	30.0 U	30.0 U	30.0 U
Antimony	UG/L	75.0 U	75.0 U	75.0 U
Arsenic	UG/L	10.0 U	10.0	10.0 U
Barium	UG/L	68.0	98	83.0
Beryllium	UG/L	1.0 U	1.0 U	1.0 U
Cadmium	UG/L	3.0 U	3.0 U	3.0 U
Calcium	UG/L	106000	117000	107000
Chromium	UG/L	5.0 U	5.0 U	5.0 U
Cobalt	UG/L	7.0	7.0	7.0
Copper	UG/L	5.0 U	5.0 U	5.0 U
Iron	UG/L	15400	41600	31000
Lead	UG/L	20.0 U	20.0 U	20.0 U
Magnesium	UG/L	26100	32500	26500
Manganese	UG/L	2740	2340	2880
Mercury	UG/L	0.2 U	0.2 U	0.2 U
Nickel	UG/L	5.0 U	10.0	5.0 U
Potassium	UG/L	5500	10900	4900
Selenium	UG/L	5.0 U	5.0 U	5.0 U
Silver	UG/L	10.0 U	10.0 U	10.0 U
Sodium	UG/L	51300	70500	52000
Thallium	UG/L	75.0 U	75.0 U	75.0 U
Vanadium	UG/L	5.0 U	5.0 U	5.0 U
Zinc	UG/L	13	23.0	13.0
Molybdenum	UG/L	20.0 U	20.0 U	20.0 U
Strontium	UG/L	531	599	558
Tin	UG/L	50.0 U	50.0 U	50.0 U
Titanium	UG/L	5.0 U	5.0 U	5.0 U

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JANUARY - MARCH, 2000

Location I.D.		AS_INFLUENT	AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water	Water
Date Sampled		01/12/2000	02/22/2000	03/28/2000
Parameter	Units			
MISC				
Total Dissolved Solids	MG/L	NA	NA	NA
Total Phenols	MG/L	NA	NA	NA
Total Suspended Solids	MG/L	NA	NA	NA

QUARTERLY OPERATING REPORT
APRIL-JUNE 2000

WORK ASSIGNMENT D003825-1

FORT EDWARD LANDFILL
FORT EDWARD (T)

SITE NO. 5-58-001
WASHINGTON (C), NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York

Erin M. Crotty, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Corporation Group Consultants
282 Delaware Avenue
Buffalo, New York 14202

G3125

May 2001

QUARTERLY REPORT OF OPERATIONS

APRIL 1 TO JUNE 30, 2000

FOR THE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WORK ASSIGNMENT NO. D003825-14

FORT EDWARD LANDFILL
NYSDEC SITE NO. 5-58-001
FORT EDWARD (T), WASHINGTON (C), NEW YORK

SUBMITTED BY:
URS CORPORATION GROUP CONSULTANTS
282 DELAWARE AVENUE
BUFFALO, NEW YORK 14202

MAY 2001

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

This report summarizes the long-term operation and maintenance (O&M) activities at the Fort Edward Landfill for the period from April 1 to June 30, 2000. The Fort Edward Landfill is a Class 2 Inactive Hazardous Waste Site (No. 5-58-001) located in the Town of Fort Edward, Washington County. The O&M services for this project will be provided for a period of 18 months with system operation reports being submitted on a quarterly basis. This is the fourth of six scheduled quarterly reports under this work assignment.

The Fort Edward Landfill remediation consists of a final cover system over the landfill, a leachate/groundwater collection system, a landfill gas collection trench, and a groundwater/leachate treatment system; including a pretreatment building and a constructed wetland treatment system (CWTS) with three cells. Refer to Figure 1 for a schematic of the process.

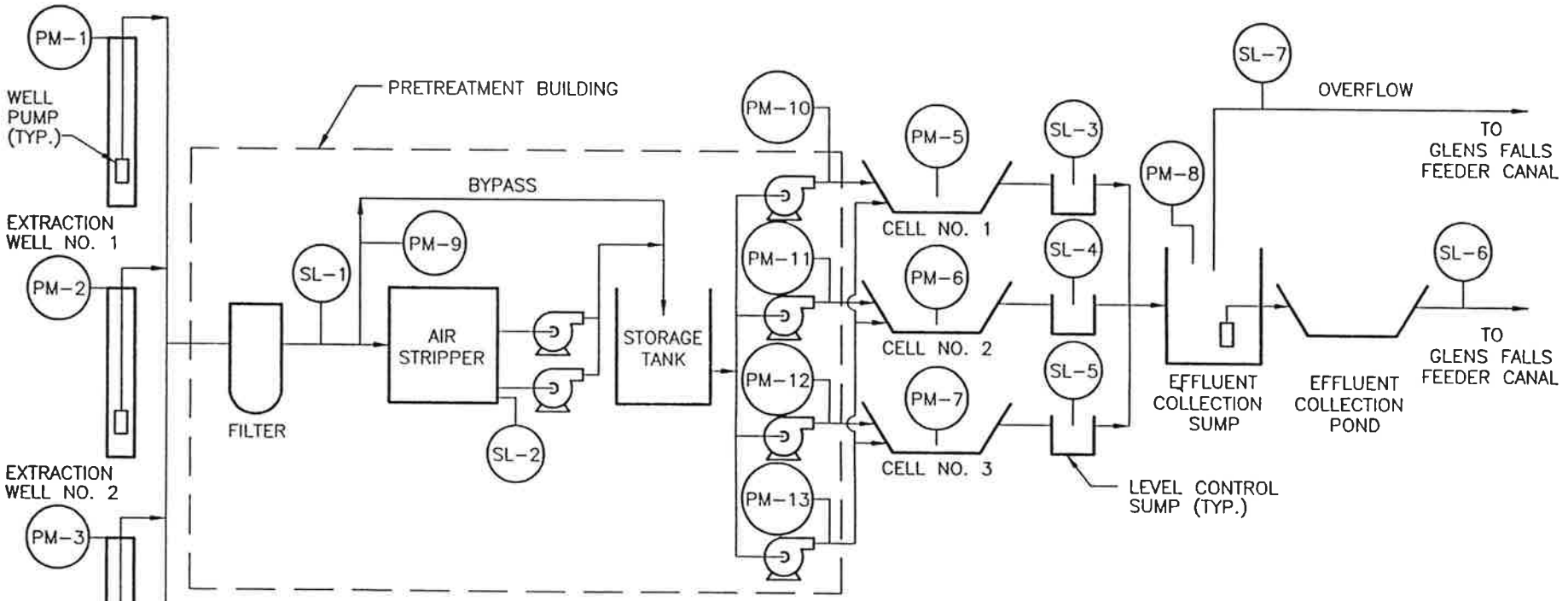
The air stripper was installed to remove volatile organic compounds (VOCs) from the water. During the start-up period, however, it became apparent that the air stripper was not needed, since the concentrations of VOCs in the influent were below the discharge criteria. As a result, the air stripper is not currently being used.

Also, the deposit control chemical FeREMEDE® is added to the incoming water to keep the iron in solution, thereby preventing it from depositing and fouling the system.

Mitkem Corporation provided analytical services for the first of eight weekly sampling events and the first round (year 1) of groundwater and surface water sampling. On May 14, 1999, the Department requested that URS Corporation Group Consultants (URS) utilize the New York State Department of Health (NYSDOH) laboratory for all analytical services after June 1, 1999. All analytical results included in this report are from the NYSDOH laboratory.

AC-13828

35505\CAD\ 1=1 1/21/00-3 EFH



PROCESS MONITORING LOCATION KEY

PM-1 = LEVEL EXT. WELL NO. 1
PM-2 = LEVEL EXT. WELL NO. 2
PM-3 = LEVEL EXT. WELL NO. 3
PM-4 = LEVEL COLLECTION TRENCH SUMP
PM-5 = LEVEL CELL 1
PM-6 = LEVEL CELL 2
PM-7 = LEVEL CELL 3
PM-8 = LEVEL EFFLUENT COLLECTION SUMP
PM-9 = BYPASS FLOW
PM-10 = DISCHARGE FLOW TO CELL 1
PM-11 = DISCHARGE FLOW TO CELL 2
PM-12 = DISCHARGE FLOW TO CELL 3
PM-13 = DISCHARGE FLOW TO EITHER CELL 1, CELL 2 OR CELL 3

SAMPLE LOCATION KEY

SL-1 = AST INFLUENT
SL-2 = AS EFFLUENT
SL-3 = CELL 1 EFF
SL-4 = CELL 2 EFF
SL-5 = CELL 3 EFF
SL-6 = POND EFF
SL-7 = OVERFLOW

LEGEND

(PM) PROCESS MONITORING LOCATION

(SL) SAMPLE LOCATION

PUMP

URS CONSULTANTS, INC.

SAMPLE AND PROCESS MONITORING LOCATIONS

FIGURE 1

2.0 PROCESS MONITORING

Process monitoring includes physical measurements of process parameters. Measurements for this remediation system include flow rates and water levels. The flow rates are measured at five (5) locations, and the water levels are measured at eight (8) locations (Figure 1). Measurements for the period are summarized in Table 1.

No flow rates or water levels were taken during the April 2000 monitoring event as directed by NYSDEC.

3.0 PERFORMANCE MONITORING

Performance monitoring included water sampling and analysis at two (2) locations (SL-1 and SL-6 on Figure 1). The analytical results are utilized to evaluate the progress of the remediation at the site.

The samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs) by NYSDEC ASP Method 95-1 and site-specific target analyte list (TAL) metals by NYSDEC ASP Methods CLP-M. Each effluent sample was also analyzed for total dissolved solids by Standard Method SM2540C, total suspended solids by SM2540D, total phenols by SM5530B and pH by SM4500H.

System influent (SL-1) and effluent (SL-6) results for all detected analytes are summarized in Table 2 (VOCs) and Table 3 (Metals). The data for total dissolved solids (TDS), total suspended solids (TSS), total phenols and pH, of the effluent samples, are summarized in Table 4. Analytical results are included in Appendix A.

No parameters exceeded discharge criteria in the report period except iron.

TABLE 1
PROCESS MONITORING SUMMARY

MONITORING LOCATION	PARAMETER	APRIL 2000 (3)	MAY 2000	JUNE 2000
PM-1	Level (ft of H_2O)	NM	5.6	NM
PM-2	Level (ft of H_2O)	NM	8.4	NM
PM-3	Level (ft of H_2O)	NM	9.0	NM
PM-4	Level (ft of H_2O)	NM	4.7	NM
PM-5	Level (ft of H_2O)	NM	2.3 - 2.4	2.3 - 2.4
PM-6	Level (ft of H_2O)	NM	2.3 - 2.4	2.3 - 2.4
PM-7	Level (ft of H_2O)	NM	2.5 - 2.6	2.5 - 2.6
PM-8	Level (ft of H_2O)	NM	4.7	4.7
PM-9	Flow (gpm) (1)	NM	27.51	NM
PM-10	Flow (gpm) (1)	NM	NM	NM
PM-11	Flow (gpm) (1)	NM	NM	NM
PM-12	Flow (gpm) (1)	NM	NM	NM
PM-13	Flow (gpm) (1),(2)	NM	NM	NM

Notes:

(1) Flow rates are intermittent. Total flows are not available because the flow indicators are not equipped with totalizers.

(2) The fourth pump, which is common to all three cells, discharged to cell #1 during this three-month period.

(3) No measurements were taken in April 2000 as directed by NYSDEC.

NM - No measurement was taken

TABLE 2
VOLATILE ORGANIC COMPOUNDS (VOCs)
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (μg/l)	CONCENTRATION (μg/l)	CONCENTRATION (μg/l)
	Discharge Criteria,	April 2000	May 2000	June 2000
Contaminant		11th	10th	14th
	(μg/l)	I : E	I : E	I : E
Vinyl Chloride	50	ND:ND	ND:ND	NA:NA
1,2 Dichloroethene	30	ND:ND	3B:ND	NA:NA
Benzene	10	2:ND	2B:ND	NA:NA
Chlorobenzene	10	1:ND	2B:ND	NA:NA
Chloroethane	20	2:ND	3B:ND	NA:NA
Ethylbenzene	10	0.5:ND	0.4B:ND	NA:NA
Toluene	10	0.6:ND	0.5B:0.04	NA:NA
Total Xylenes	10	4:ND	3B:ND	NA:NA
Methylene Chloride	50	0.5B:ND	0.4B:0.2B	NA:NA
1,1 Dichloroethane	30	ND:ND	ND:ND	NA:NA
Methyl Ethylketone	NV	ND:ND	ND:ND	NA:NA

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

B = Blank Contamination

Only detected analytes are included.

Shaded area indicates result exceeds standard.

TABLE 3 – METALS
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (μg/l)	CONCENTRATION (μg/l)	CONCENTRATION (μg/l)
	Discharge Criteria (μg/l)	April 2000	May 2000	June 2000
Contaminant		11th	10th	14th
		I : E	I : E	I : E
Barium	3500	86:25	76:93	NA:52
Calcium	NV	114:34	114:92	NA:71
Cobalt	5	ND:ND	8:ND	NA:ND
Iron	300	22.4* :1.1*	29* :11.6*	NA :7.2*
Magnesium	NV	32:7.8	31:23	NA:18
Manganese	NV	2.7*:117	3*:1.3*	NA:.812
Nickel	9.6	ND:ND	ND:6	NA:ND
Potassium	NV	7.1:1.4	4.5:5.8	NA:2.3
Sodium	NV	55.2:6.3	46.5:38.2	NA:25.6
Zinc	170	79:ND	ND:ND	NA:ND

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

* = Multiply by 1,000

B = Blank Contamination

Only detected analytes are included.

Shaded area indicates result exceeds standard.

TABLE 4
SUMMARY OF ADDITIONAL ANALYTICAL RESULTS FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (mg/l)	CONCENTRATION (mg/l)	CONCENTRATION (mg/l)
	Discharge Criteria	April 2000	May 2000	June 2000
Contaminant		11th	10th	14th
		E	E	E
Total Dissolved Solids	500 mg/l	179	470	320
Total Suspended Solids	50 mg/l	10	0.004	0.001
Total Phenols	0.008 mg/l	0.005	0.004	0.001
pH	6.0 - 9.0	NA	8.8	NA

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

B = Blank Contamination

Only detected analytes are included.

Shaded area indicates result exceeds standard.

4.0 GROUNDWATER MONITORING

Samples are scheduled to be collected and analyzed from the network of groundwater monitoring wells twice per year (Figure 2). Samples were collected on May 10, 2000 during this reporting period. These samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs) by NYSDEC ASP Method 95-1, site-specific target analyte list (TAL) Metals by NYSDEC ASP Methods CLP-M and various wet chemistry parameters. Chemicals detected in the samples from the groundwater monitoring wells are summarized in Table 5. For comparison, the groundwater monitoring well data from October 1999 has also been included. Analytical results are presented in Appendix A.

During this operating period, the established groundwater criteria for seven analytical parameters were exceeded in one or more sampling locations. These parameters were benzene, antimony, cadmium, iron, magnesium, manganese and sodium. A summary is provided below.

Benzene: Benzene exceeded the groundwater criterion (1 µg/l) in MW-01D.

Antimony: Antimony exceeded the groundwater criterion (3 µg/l) in MW-07.

Cadmium: Cadmium exceeded the groundwater criterion (5 µg/l) in MW-06 B.

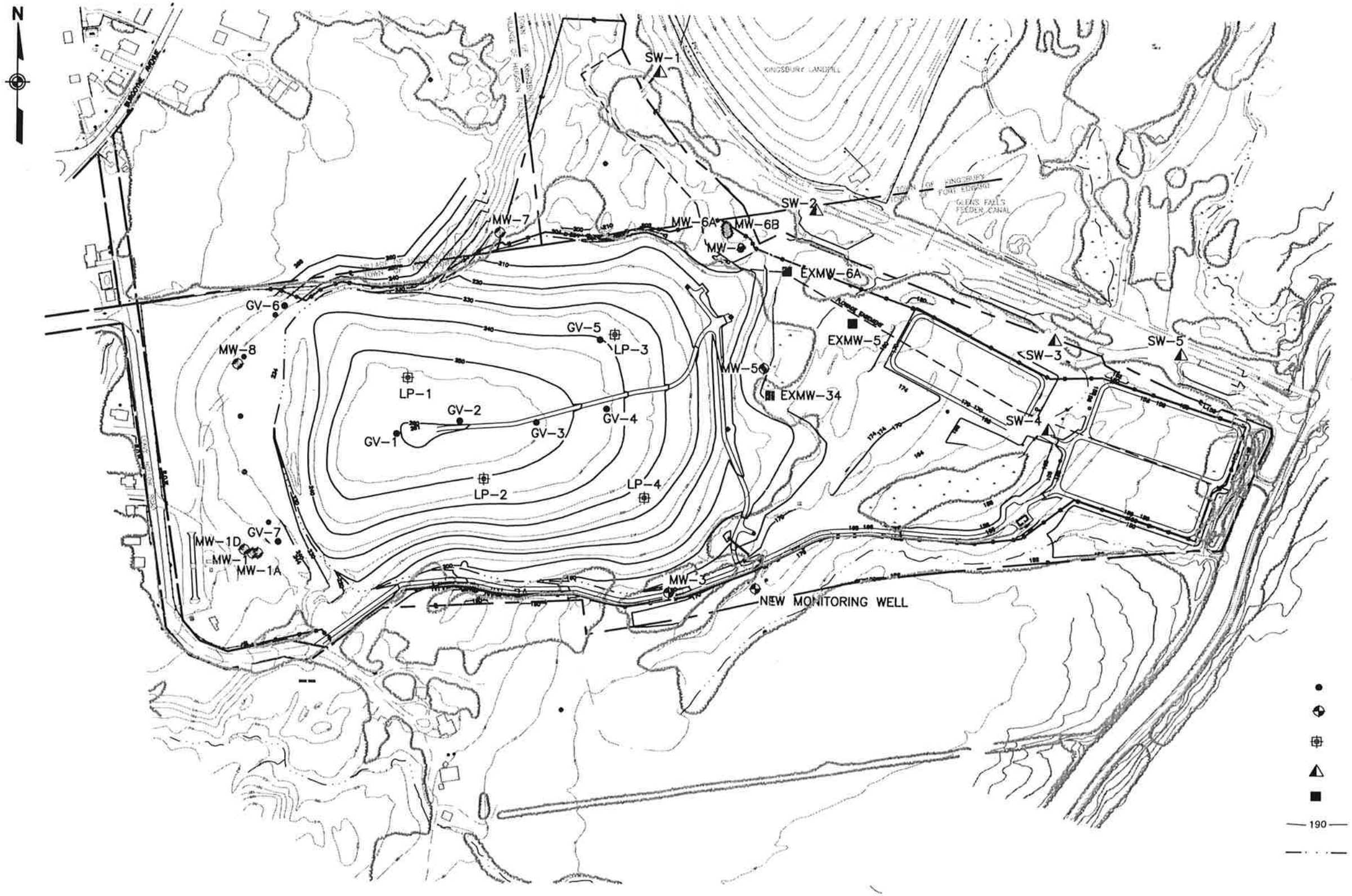
Iron: Iron exceeded the groundwater criterion (300 µg/l) in all of the eleven monitoring wells.

Magnesium: Magnesium exceeded the groundwater criterion (35,000 µg/l) in MW-06, MW-06A, and the new well (NW).

Sodium: Sodium exceeded the groundwater criterion (20,000 µg/l) in MW-01, MW-01A, MW-01D, MW-02, MW-02A, MW-06, MW-06A, MW-06B and the NW.

It is significant to note that two parameters (arsenic and chlorobenzene) that exceeded the discharge criteria in the October 1999 report were not above the criteria in this report. Antimony was the only parameter that exceeded the discharge criteria in this report that was not exceeded in the October 1999 report. Antimony was reported in only one of the monitoring wells this period.

J:\35505\CAD\ 1=300 3/22/00-1 WOP



NOTE:
BASE MAPPING FOR THIS DRAWING WAS TAKEN FROM DRAWING NO.5, FINAL SITE PLAN, OF THE FORT EDWARD LANDFILL REMEDIAL ACTION RECORD DRAWINGS, ISSUED SEPTEMBER 1999.

GROUNDWATER, SURFACE WATER, AND GAS MONITORING LOCATIONS

URS CONSULTANTS, INC.

FIGURE 2

CC-5597B

FRO

Contaminant	NYSDEC Groundwater Standards*	MW-01		MW-01A		MW-01D		
		Oct '99	May 2000	Oct '99	May 2000	Oct '99	May 2000	Oct '99
Acetone	50	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	ND	ND	ND	9	2	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	5	ND	ND	ND	ND	ND	ND	ND
Toluene	5	ND	ND	ND	3	ND	ND	ND
1,4-Dichlorobenzene	3	ND	ND	ND	ND	ND	ND	ND
Aluminum	NV	140	750	1500	1800	140	1400	320
Antimony	3	ND	ND	ND	ND	ND	ND	ND
Arsenic	25	ND	ND	ND	11	ND	ND	ND
Barium	1000	32.1	ND	ND	ND	780	640	ND
Cadmium	5	ND	ND	ND	ND	ND	ND	ND
Calcium	NV	39000	43000	16000	31000	13000	32000	12000
Chromium	50	ND	ND	ND	ND	ND	ND	ND

Only detected analytes are included. ND = Not Detected NV = No Criteria Esta

New York State Department of Environmental Conservation, June 1998
Division of Water Technical and Operational Guidance Series (1.1.1)

shaded area indicates result exceeds standard.

TABLE 5 (May 2000)
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER MONITORING WELLS (Con

		Concentration (µg/l)												
Contaminant	NYSDEC Groundwater Standards*	MW-01		MW-01A		MW-01D		MW-02		MW-02A		MW-06		M
		Oct '99	May 2000	Oct '99	May 2000	Oct '99	May 2000	Oct '99	May 2000	Oct '99	May 2000	Oct '99	May 2000	Oct '99
Cobalt	NV	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	200	ND	ND	ND	ND	ND	ND	ND	71	ND	ND	ND	ND	ND
Iron	300	**1100**	**2200**	**2100**	**2600**	140	**3300**	2900	**15000**	**8600**	**13000**	**80000**	**84000**	**2600**
Lead	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	35000	8200	11000	2200	2700	5600	7900	31000	25000	24000	24000	28000	**51000**	**42000**
Manganese	300	61	74	76	91	8.9	77	**1300**	**500**	**430**	**700**	**2300**	**2300**	**3200**
Nickel	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	NV	ND	ND	ND	ND	3000	ND	3400	ND	2400	5000	23000	27000	6200
Silver	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	20000	**36000**	**38000**	20000	**24000**	**48000**	**54000**	**51000**	**28000**	**26000**	**28000**	**100000**	**84000**	**87000**
Thallium	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NV	ND	ND	ND	ND	6.8	ND	ND	20	ND	ND	19	21	ND
Zinc	2000	21	ND	11	11B	10	25	ND	ND	10	ND	16	ND	66

Only detected analytes are included. ND = Not Detected NV = No Criteria Established NA = Not Analyzed B = Blank Contaminati

* New York State Department of Environmental Conservation, June 1998
Division of Water Technical and Operational Guidance Series (1.1.1)

Shaded area indicates result exceeds standard.

5.0 SURFACE WATER MONITORING

Sampling and analysis of the Glens Falls Feeder Canal and the small tributaries flowing from the landfill to the Feeder Canal are performed twice a year to assess the effect of the remediation on surface water quality. During this reporting period, surface water samples were collected on May 3, 2000 at two locations: SW-2 and SW-3 (Figure 2). These samples were analyzed for site-specific target analyte list (TAL) metals by NYSDEC ASP Methods CLP-M. Metals detected in the surface water samples are summarized in Tables 6 and 6A. For comparison, the surface water results from October 1999 have also been included. Analytical results are presented in Appendix A.

During this reporting period, the established surface water criteria for one analytical parameter (iron) was exceed as summarized below.

Iron: Iron exceeded the surface water criterion (300 µg/l) at SW-2 and SW-3.

It should be noted that the iron concentrations decreased significantly from October 1999 to May 2000.

6.0 GAS MONITORING

Gas vents (Figure 2) were monitored in accordance with NYSDEC Part 360 requirements, utilizing a photoionization detector (PID) and an explosive gas meter on October 21, 1999. Monitoring results are presented in Table 7.

During this period, the established gas monitoring criteria of 100% of the lower explosive limit (LEL) for methane was exceeded in 5 of the 7 monitoring points as summarized below.

% LEL	% LEL of methane exceeded the criterion of 100% in GV-1 (182%), GV-2 (280%), GV-3 (180%), GV-4 (392%), and GV-5 (275%).

It is significant to note that no nonmethane organic compounds or hydrogen sulfide were detected at any of the gas vent locations. The NYSDEC was notified of all exceedances over 50% LEL, in accordance with the Project Management Work Plan.

Gas vents were also inspected on October 21, 1999. Inspection results are summarized on Table 7A. As shown, no problems were noted during the inspection.

TABLE 6 (MAY 2000)
SUMMARY OF ANALYTICAL RESULTS
FROM SURFACE WATER MONITORING

Concentration (μg/l)			
Contaminant	**NYSDEC Class C Surface Water Standards***	**SW-3**	
		Oct '99	**May '00**
Aluminum	100	570	66
Arsenic	150	ND	ND
Barium	NV	ND	ND
Beryllium	**	ND	ND
Cadmium	**	ND	ND
Calcium	NV	88000	120000
Chromium	**	ND	ND
Cobalt	5	ND	ND
Copper	**	ND	ND
Iron	300	7300	1600
Lead	**	10	ND
Magnesium	NV	25000	38000
Manganese	NV	3600	450
Nickel	**	ND	ND
Potassium	NV	5600	5900
Silver	0.1	ND	ND
Sodium	NV	38000	36000
Vanadium	14	ND	ND
Zinc	**	26	ND

ND = Not Detected NV = No Criteria Established
Only detected analytes are included.

* New York State Department of Environmental Conservation, June 1998
Division of Water Technical and Operational Guidance Series (1.1.1)

** NYSDEC Standard is based on hardness, and hardness data is not available.

Shaded area indicates result exceeds standard.

TABLE 6A (May 2000)
SUMMARY OF ANALYTICAL RESULTS
FROM SURFACE WATER MONITORING

Concentration (μg/l)			
Contaminant	**NYSDEC Class D Surface Water Standards***	**SW-2**	
		Oct '99	**May '00**
Aluminum	NV	3000	ND
Arsenic	340	49	ND
Barium	NV	1100	ND
Beryllium	NV	ND	ND
Cadmium	**	100	ND
Calcium	NV	110000	100000
Chromium	**	ND	ND
Cobalt	110	46	ND
Copper	**	25	ND
Iron	300	490000	18000
Lead	**	54	ND
Magnesium	NV	23000	31000
Manganese	NV	2300	1700
Nickel	**	ND	ND
Potassium	NV	17000	9100
Silver	**	ND	ND
Sodium	NV	71000	55000
Vanadium	190	100	ND
Zinc	**	1100	ND

ND = Not Detected NV = No Criteria Established

Only detected analytes are included.

* New York State Department of Environmental Conservation, June 1998
Division of Water Technical and Operational Guidance Series (1.1.1)

** NYSDEC Standard is based on hardness, and hardness data is not available.

Shaded area indicates result exceeds standard.

7.0 MAINTENANCE AND REPAIR

The remediation system operated efficiently and as expected throughout this period. No significant maintenance or repair activities occurred during this reporting period.

TABLE 7 (October 1999)
GAS MONITORING RESULTS
FROM GAS VENTS

Location	Parameter			
	PID*	% LEL**	H_2S Conc.	O_2 Conc.
GV-1	0	182	0	10
GV-2	0	280	0	9.5
GV-3	0	180	0	7.7
GV-4	0	392	0	8.0
GV-5	0	275	0	10.1
GV-6	0	0	0	18.9
GV-7	0	58	0	8.6

* Photoionization detector

** Lower Explosive Limit

Shaded areas indicate, results exceeded standard.

- The NYSDEC was notified of levels above 50% LEL.

TABLE 7A

(Table 2-1 of the Project Management Work Plan)

GAS VENTING SYSTEM

CHECKLIST FOR SEMIANNUAL INSPECTION

Component	Inspection Items	Number/Location/ Area Checked	Condition
Vents/Canisters	Integrity of above grade pipes and joints	GV-1	No problems noted
	Plumbness and differential settlement	GV-2	No problems noted
	Obstruction of vents by bird, insect, or animal nests	GV-3	No problems noted
	Corrosion or deterioration of pipes, supports, or the canister	GV-4	No problems noted
		GV-5	No problems noted
	Localized browning of vegetation	GV-6	No problems noted
		GV-7	No problems noted

APPENDIX A

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		04/11/2000	04/11/2000	05/10/2000	05/10/2000	06/14/2000	06/14/2000
Parameter	Units		DUP		DUP		DUP
Volatiles							
1,1,1-Trichloroethane	UG/L	10 U	NA	10 U	NA	NA	NA
1,1,2,2-Tetrachloroethane	UG/L	10 U	NA	10 U	NA	NA	NA
1,1,2-Trichloroethane	UG/L	10 U	NA	10 U	NA	NA	NA
1,1-Dichloroethane	UG/L	10 U	NA	10 U	NA	NA	NA
1,1-Dichloroethene	UG/L	10 U	NA	10 U	NA	NA	NA
1,2-Dichloroethane	UG/L	10 U	NA	10 U	NA	NA	NA
1,2-Dichloroethene (total)	UG/L	10 U	NA	10 U	NA	NA	NA
1,2-Dichloropropane	UG/L	10 U	NA	10 U	NA	NA	NA
2-Hexanone	UG/L	10 U	NA	10 U	NA	NA	NA
4-Methyl-2-Pentanone	UG/L	10 U	NA	10 U	NA	NA	NA
Acetone	UG/L	10 U	NA	10 U	NA	NA	NA
Benzene	UG/L	10 U	NA	10 U	NA	NA	NA
Bromodichloromethane	UG/L	10 U	NA	10 U	NA	NA	NA
Bromoform	UG/L	10 U	NA	10 U	NA	NA	NA
Bromomethane	UG/L	10 U	NA	10 U	NA	NA	NA
Carbon Disulfide	UG/L	10 U	NA	10 U	NA	NA	NA
Carbon Tetrachloride	UG/L	10 U	NA	10 U	NA	NA	NA
Chlorobenzene	UG/L	10 U	NA	10 U	NA	NA	NA
Chloroethane	UG/L	10 U	NA	10 U	NA	NA	NA
Chloroform	UG/L	10 U	NA	10 U	NA	NA	NA
Chloromethane	UG/L	10 U	NA	10 U	NA	NA	NA
Dibromochloromethane	UG/L	10 U	NA	10 U	NA	NA	NA
Ethylbenzene	UG/L	10 U	NA	10 U	NA	NA	NA
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	NA	10 U	NA	NA	NA
Methylene Chloride	UG/L	10 U	NA	0.2 BJ	NA	NA	NA
Styrene	UG/L	10 U	NA	10 U	NA	NA	NA
Tetrachloroethene	UG/L	10 U	NA	10 U	NA	NA	NA
Toluene	UG/L	10 U	NA	0.4 J	NA	NA	NA
Total Xylenes	UG/L	10 U	NA	10 U	NA	NA	NA
Trichloroethene	UG/L	10 U	NA	10 U	NA	NA	NA
Vinyl Chloride	UG/L	10 U	NA	10 U	NA	NA	NA
cis-1,3-Dichloropropene	UG/L	10 U	NA	10 U	NA	NA	NA
trans-1,3-Dichloropropene	UG/L	10 U	NA	10 U	NA	NA	NA

MADE BY:_____DATE:_____
CHKD. BY:_____DATE:_____

J:\35505\DB\PROGRAM\RES.DBF(res6.frx,PRINT6.PRG)
04/12/2001

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		04/11/2000	04/11/2000	05/10/2000	05/10/2000	06/14/2000	06/14/2000
Parameter	Units		DUP		DUP		DUP
PCB							
Aroclor 1221	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1016 /1242	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1248	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1254	UG/L	NA	NA	0.05 U	NA	NA	NA
Aroclor 1260	UG/L	NA	NA	0.05 U	NA	NA	NA

MADE BY:_____DATE:_____
CHKD. BY:_____DATE:_____

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		04/11/2000	04/11/2000	05/10/2000	05/10/2000	06/14/2000	06/14/2000
Parameter	Units		DUP		DUP		DUP
Metals							
Aluminum	UG/L	650	652	30.0 U	30.0 U	30.0 UJ	30.0 UJ
Antimony	UG/L	75.0 U	75.0 U	75.0 U	75.0 U	75.0 UJ	75.0 UJ
Arsenic	UG/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Barium	UG/L	25	26	93	90	52 J	10.0 UJ
Beryllium	UG/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Cadmium	UG/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 UJ	3.0 UJ
Calcium	UG/L	33.9	34.4	95.2	92.9	71.6 J	70.2 J
Chromium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Cobalt	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Copper	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Iron	UG/L	1100	960	11600	11300	7190 J	7050 J
Lead	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 UJ	20.0 UJ
Magnesium	UG/L	7.8	7.9	23.6	23.0	18.3 J	17.9 J
Manganese	UG/L	117	97	1290	1260	812 J	800 J
Mercury	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	UG/L	8.0 U	8.0 U	6	5	8.0 UJ	8.0 UJ
Potassium	UG/L	1.4	1.4	5.8	5.7	2.3 J	2.2 J
Selenium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U
Silver	UG/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 UJ	10.0 UJ
Sodium	UG/L	6.3	6.0	38.2	36.6	25.6 J	25.1 J
Thallium	UG/L	75.0 U	75.0 U	75.0 U	75.0 U	75.0 UJ	75.0 UJ
Vanadium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ
Zinc	UG/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 UJ	10.0 UJ
Molybdenum	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 UJ	20.0 UJ
Strontium	UG/L	139	140	515	497	413 J	403 J
Tin	UG/L	50.0 U	50.0 U	50.0 U	50.0 U	50.0 UJ	50.0 UJ
Titanium	UG/L	17	17	5.0 U	5.0 U	5.0 UJ	5.0 UJ

MADE BY:_____DATE:_____
CHKD. BY:_____DATE:_____

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD	AST_EFFLUENT	AST_EFFLUENTD
Matrix		Water	Water	Water	Water	Water	Water
Date Sampled		04/11/2000	04/11/2000	05/10/2000	05/10/2000	06/14/2000	06/14/2000
Parameter	Units		DUP		DUP		DUP
MISC							
Total Dissolved Solids	MG/L	179	182	470	450	320	310
Total Phenols	MG/L	0.005	0.006	0.004	0.004	0.001 UJ	0.001 UJ
Total Suspended Solids	MG/L	10	8	32	31	15	12

MADE BY:_____DATE:_____
CHKD. BY:_____DATE:_____

J:\35505\DB\PROGRAM\RES.DBF(res6.frx,PRINT6.PRG)
04/12/2001

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water
Date Sampled		04/11/2000	05/10/2000
Parameter	Units		
Volatiles			
1,1,1-Trichloroethane	UG/L	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U
1,2-Dichloroethene (total)	UG/L	5 J	2 J
1,2-Dichloropropane	UG/L	10 U	10 U
2-Hexanone	UG/L	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	2 J	10 U
Bromodichloromethane	UG/L	10 U	10 U
Bromoform	UG/L	10 U	10 U
Bromomethane	UG/L	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U
Chlorobenzene	UG/L	1 J	0.6 J
Chloroethane	UG/L	2 J	2 J
Chloroform	UG/L	10 U	0.9 J
Chloromethane	UG/L	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U
Ethylbenzene	UG/L	0.5 J	0.2 J
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	10 U
Methylene Chloride	UG/L	0.5 BJ	1 BJ
Styrene	UG/L	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U
Toluene	UG/L	0.6 J	0.06 J
Total Xylenes	UG/L	4 J	0.9 J
Trichloroethene	UG/L	1 J	2 J
Vinyl Chloride	UG/L	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water
Date Sampled		04/11/2000	05/10/2000
Parameter	Units		
PCB			
Aroclor 1221	UG/L	NA	NA
Aroclor 1016 /1242	UG/L	NA	NA
Aroclor 1248	UG/L	NA	NA
Aroclor 1254	UG/L	NA	NA
Aroclor 1260	UG/L	NA	NA

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water
Date Sampled		04/11/2000	05/10/2000
Parameter	Units		
Metals			
Aluminum	UG/L	30.0 U	30.0 U
Antimony	UG/L	75.0 U	75.0 U
Arsenic	UG/L	10.0 U	10.0 U
Barium	UG/L	86 U	76
Beryllium	UG/L	1.0 U	1.0 U
Cadmium	UG/L	3.0 U	3.0 U
Calcium	UG/L	114 U	114
Chromium	UG/L	5.0 U	5.0 U
Cobalt	UG/L	5 U	8
Copper	UG/L	5.0 U	5.0 U
Iron	UG/L	22400 U	29000
Lead	UG/L	20.0 U	20.0 U
Magnesium	UG/L	32.3 U	31.0
Manganese	UG/L	2700 U	3060
Mercury	UG/L	0.2 U	0.2 U
Nickel	UG/L	8.0 U	8.0 U
Potassium	UG/L	7.1 U	4.5
Selenium	UG/L	5.0 U	5.0 U
Silver	UG/L	10.0 U	10.0 U
Sodium	UG/L	55.1 U	46.5
Thallium	UG/L	75.0 U	75.0 U
Vanadium	UG/L	5.0 U	5.0 U
Zinc	UG/L	79 U	10.0 U
Molybdenum	UG/L	20.0 U	20.0 U
Strontium	UG/L	594 U	637
Tin	UG/L	50.0 U	50.0 U
Titanium	UG/L	5.0 U	5.0 U

TABLE 1
ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water
Date Sampled		04/11/2000	05/10/2000
Parameter	Units		
MISC			
Total Dissolved Solids	MG/L	NA	NA
Total Phenols	MG/L	NA	NA
Total Suspended Solids	MG/L	NA	NA

TABLE 1
ANALYTICAL FIELD QC SAMPLE RESULTS
FORT EDWARD LANDFILL

Location I.D.		FIELDQC	FIELDQC	FIELDQC
Sample I.D.		TRIP BLANK	AST_EFFLUENT	TRIP BLANK
Matrix		Water	Water	Water
Date Sampled		04/11/2000	05/10/2000	05/10/2000
Parameter	Units			
Volatiles				
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U
Benzene	UG/L	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U
Chloroethane	UG/L	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U
Chloromethane	UG/L	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	10 U	10 U
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	10 U	10 U
Methylene Chloride	UG/L	10 U	0.1 U	0.1 BJ
Styrene	UG/L	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U
Toluene	UG/L	10 U	0.4 BJ	10 U
Total Xylenes	UG/L	10 U	0.1 BJ	10 U
Trichloroethene	UG/L	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U

MADE BY:_____DATE:_____
CHKD. BY:_____DATE:_____

QUARTERLY OPERATING REPORT
JULY-~~AUGUST~~ SEPT. 2000

WORK ASSIGNMENT D003825-1

FORT EDWARD LANDFILL
FORT EDWARD (T)

SITE NO. 5-58-001
WASHINGTON (C), NY

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York

Erin M. Crotty, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Corporation Group Consultants
282 Delaware Avenue
Buffalo, New York 14202

G3125

May 2001

QUARTERLY REPORT OF OPERATIONS

JULY 1 TO SEPTEMBER 30, 2000

FOR THE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WORK ASSIGNMENT NO. D003825-14

FORT EDWARD LANDFILL
NYSDEC SITE NO. 5-58-001
FORT EDWARD (T), WASHINGTON (C), NEW YORK

SUBMITTED BY:
URS CORPORATION GROUP CONSULTANTS
282 DELAWARE AVENUE
BUFFALO, NEW YORK 14202

MAY 2001

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

This report summarizes the long-term operation and maintenance (O&M) activities at the Fort Edward Landfill for the period from July 1 to September 30, 2000. The Fort Edward Landfill is a Class 2 Inactive Hazardous Waste Site (No. 5-58-001) located in the Town of Fort Edward, Washington County. The O&M services for this project will be provided for a period of 18 months with system operation reports being submitted on a quarterly basis. This is the fifth of six scheduled quarterly reports under this work assignment.

The Fort Edward Landfill remediation consists of a final cover system over the landfill, a leachate/groundwater collection system, a landfill gas collection trench, and a groundwater/leachate treatment system; including a pretreatment building and a constructed wetland treatment system (CWTS) with three cells. Refer to Figure 1 for a schematic of the process.

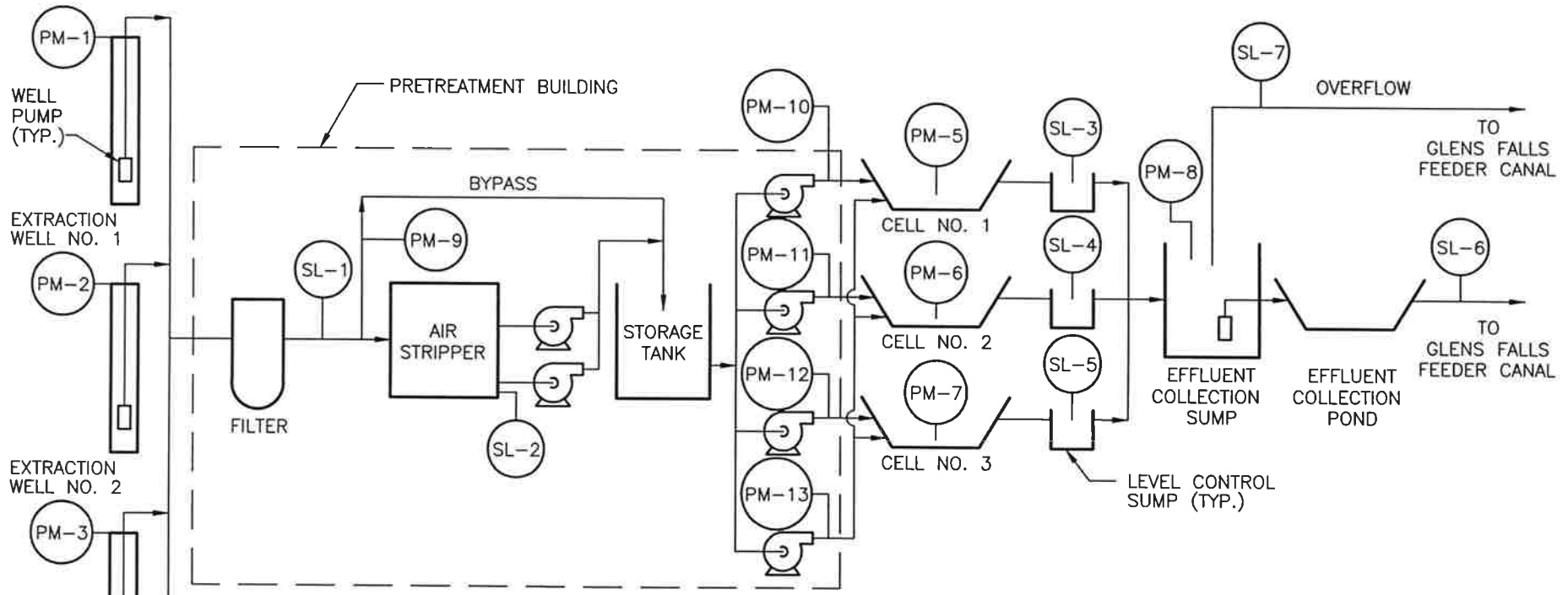
The air stripper was installed to remove volatile organic compounds (VOCs) from the water. During the start-up period, however, it became apparent that the air stripper was not needed, since the concentrations of VOCs in the influent were below the discharge criteria. As a result, the air stripper is not currently being used.

Also, the deposit control chemical FeREMEDE® is added to the incoming water to keep the iron in solution, thereby preventing it from depositing and fouling the system.

Mitkem Corporation provided analytical services for the first of eight weekly sampling events and the first round (year 1) of groundwater and surface water sampling. On May 14, 1999, the Department requested that URS Corporation Group Consultants (URS) utilize the New York State Department of Health (NYSDOH) laboratory for all analytical services after June 1, 1999. All analytical results included in this report are from the NYSDOH laboratory.

AC-13828

35505\CAD\ 1=1 1/21/00-3 EFH



PROCESS MONITORING LOCATION KEY

PM-1 = LEVEL EXT. WELL NO. 1
PM-2 = LEVEL EXT. WELL NO. 2
PM-3 = LEVEL EXT. WELL NO. 3
PM-4 = LEVEL COLLECTION TRENCH SUMP
PM-5 = LEVEL CELL 1
PM-6 = LEVEL CELL 2
PM-7 = LEVEL CELL 3
PM-8 = LEVEL EFFLUENT COLLECTION SUMP
PM-9 = BYPASS FLOW
PM-10 = DISCHARGE FLOW TO CELL 1
PM-11 = DISCHARGE FLOW TO CELL 2
PM-12 = DISCHARGE FLOW TO CELL 3
PM-13 = DISCHARGE FLOW TO EITHER CELL 1, CELL 2 OR CELL 3

SAMPLE LOCATION KEY

SL-1 = AST INFLUENT
SL-2 = AS EFFLUENT
SL-3 = CELL 1 EFF
SL-4 = CELL 2 EFF
SL-5 = CELL 3 EFF
SL-6 = POND EFF
SL-7 = OVERFLOW

LEGEND

(PM) PROCESS MONITORING LOCATION

(SL) SAMPLE LOCATION

PUMP

URS CONSULTANTS, INC.

SAMPLE AND PROCESS MONITORING LOCATIONS

FIGURE 1

2.0 PROCESS MONITORING

Process monitoring includes physical measurements of process parameters. Measurements for this remediation system include flow rates and water levels. The flow rates are measured at five (5) locations, and the water levels are measured at eight (8) locations (Figure 1). Measurements for the period are summarized in Table 1.

3.0 PERFORMANCE MONITORING

Performance monitoring included water sampling and analysis at two (2) locations (SL-1 and SL-6 on Figure 1). During this monitoring period neither influent or effluent samples were taken for analysis in July due to low flow. The analytical results are utilized to evaluate the progress of the remediation at the site.

The samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs) by NYSDEC ASP Method 95-1 and site-specific target analyte list (TAL) metals by NYSDEC ASP Methods CLP-M. Each effluent sample was also analyzed for total dissolved solids by Standard Method SM2540C, total suspended solids by SM2540D, total phenols by SM5530B and pH by SM4500H.

System influent (SL-1) and effluent (SL-6) results for all detected analytes for August and September are summarized in Table 2 (VOCs) and Table 3 (Metals). The data for total dissolved solids (TDS), total suspended solids (TSS), total phenols and pH, of the effluent samples, are summarized in Table 4. Analytical results are included in Appendix A.

During this operating period, the discharge criterion (500 mg/l) for total dissolved solids (TDS) was exceeded in the effluent sample for September (516 mg/l). The average TDS concentration for this period (463 mg/l) is less than last period (535 mg/l). The TDS discharge criterion was met for August (484 mg/l).

Iron exceeded discharge criteria for the two sampling events.

In general, effluent quality has remained stable based on data from this report compared to the previous monitoring period.

TABLE 1
PROCESS MONITORING SUMMARY

MONITORING LOCATION	PARAMETER	JULY 2000	AUGUST 2000	SEPTEMBER 2000
PM-1	Level (ft of H_2O)	6.2	5.9	4.8
PM-2	Level (ft of H_2O)	12.7	10.9	17.7
PM-3	Level (ft of H_2O)	12.3	8.7	9.1
PM-4	Level (ft of H_2O)	4.78	4.8	4.8
PM-5	Level (ft of H_2O)	0.7 - 2.5	0.9 - 2.5	0.7 - 2.4
PM-6	Level (ft of H_2O)	1.8 - 2.3	2.3 - 3.7	2.3 - 3.9
PM-7	Level (ft of H_2O)	2.5 - 2.6	2.6	2.5 - 2.6
PM-8	Level (ft of H_2O)	4.78	4.7	NM
PM-9	Flow (gpm) [(1)]	----	22.4	11.1
PM-10	Flow (gpm) [(1)]	----	19.4	17.7
PM-11	Flow (gpm) [(1)]	----	15.9	9.1
PM-12	Flow (gpm) [(1)]	----	12.9	4.8
PM-13	Flow (gpm) [(1),(2)]	----	19.5	4.8

Notes:

(1) Flow rates are intermittent. Total flows are not available because the flow indicators are not equipped with totalizers.

(2) The fourth pump, which is common to all three cells, discharged to cell #1 during this three-month period.

NM indicates that no measurement was taken

No flow data was recorded due to low/no flow

TABLE 2
VOLATILE ORGANIC COMPOUNDS (VOCs)
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (μg/l)	CONCENTRATION (μg/l)	CONCENTRATION (μg/l)
	Discharge Criteria,	July 2000	August 2000	September 2000
Contaminant		--	16th	20th
	(μg/l)	I : E	I : E	I : E
Vinyl Chloride	50	NA:NA	ND:ND	ND:ND
1,2 Dichloroethene	30	NA:NA	ND:ND	ND:ND
Benzene	10	NA:NA	1:ND	ND:ND
Chlorobenzene	10	NA:NA	0.6:ND	1:ND
Chloroethane	20	NA:NA	2:ND	3:ND
Ethylbenzene	10	NA:NA	0.5B:ND	0.07:ND
Toluene	10	NA:NA	0.4:0.7	ND:ND
Total Xylenes	10	NA:NA	2:1B	0.7:0.03
Methylene Chloride	50	NA:NA	ND:ND	0.3B:ND
1,1 Dichloroethane	30	NA:NA	ND:ND	ND:ND
Methyl Ethylketone	NV	NA:NA	ND:ND	ND:ND

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

B = Blank Contamination

Only detected analytes are included.

Shaded area indicates result exceeds standard.

TABLE 3 – METALS
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (μg/l)	CONCENTRATION (μg/l)	CONCENTRATION (μg/l)
	Discharge Criteria (μg/l)	July 2000	August 2000	September 2000
Contaminant		--	16th	20th
		I : E	I : E	I : E
Barium	3500	NA:NA	69:120	60:73
Calcium	NV	NA:NA	107*:79.9*	96.4*:90.5*
Cobalt	5	NA:NA	8:ND	9:ND
Iron	300	NA:NA	33.3* :39.6*	29.5* :5.3*
Magnesium	NV	NA:NA	27.1*:20.1*	24.3*:25.9*
Manganese	NV	NA:NA	3.44*:1.25*	3.2*:1.05*
Nickel	9.6	NA:NA	ND:ND	ND:ND
Potassium	NV	NA:NA	4.0*:4.6*	3.7*:6.7*
Sodium	NV	NA:NA	47.9*:32.0*	38.7*:38.6*
Zinc	170	NA:NA	41:ND	13:ND

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

* = Multiply by 1,000

B = Blank Contamination

Only detected analytes are included.

Shading indicates result exceeds standard

TABLE 4
SUMMARY OF ADDITIONAL ANALYTICAL RESULTS FROM GROUNDWATER TREATMENT SYSTEM

		CONCENTRATION (mg/l)	CONCENTRATION (mg/l)	CONCENTRATION (mg/l)
	Discharge Criteria	July 2000	August 2000	September 2000
Contaminant		--	16th	20th
		E	E	E
Total Dissolved Solids	500 mg/l	NA	410	516
Total Suspended Solids	50 mg/l	NA	63	14
Total Phenols	0.008 mg/l	NA	NA	0.007
pH	6.0 - 9.0	NA	NA	NA

I = Influent E = Effluent ND = Not Detected NA = Not Analyzed NV = No discharge criteria has been established

B = Blank Contamination

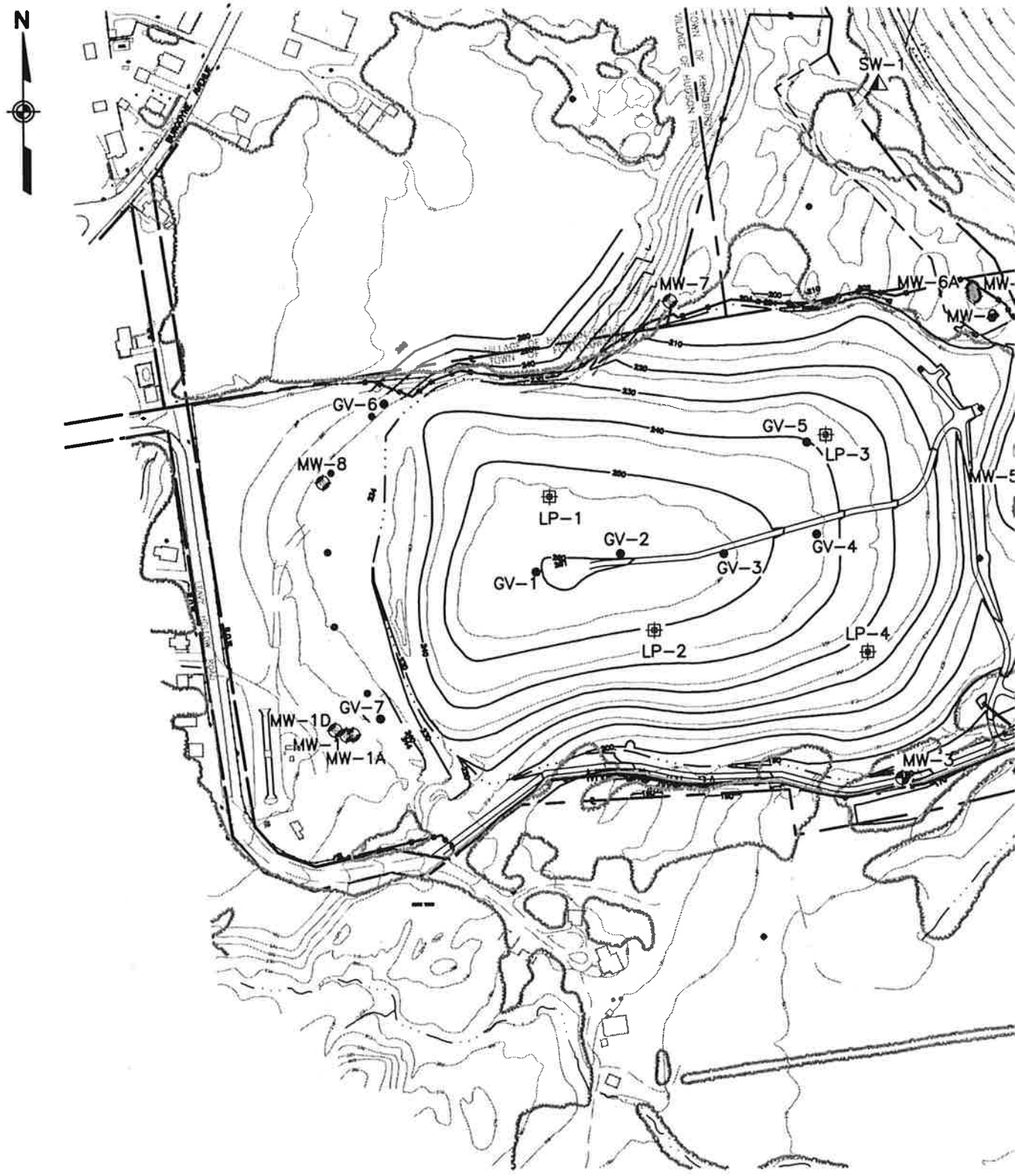
Shading indicates result exceeds standard

Only detected analytes are included.

Shaded area indicates result exceeds standard.

4.0 GROUNDWATER MONITORING

Samples are scheduled to be collected and analyzed from the network of groundwater monitoring wells twice per year (Figure 2). Samples were not collected during this reporting period. The next scheduled groundwater sampling event is November 2000.



NOTE:
BASE MAPPING FOR THIS D
FORT EDWARD LANDFILL RE

J:\35505\CAD\ 1=300 3/22/00-1 WOP

CC-5597B

5.0 SURFACE WATER MONITORING

Sampling and analysis of the Glens Falls Feeder Canal and the small tributaries flowing from the landfill to the Feeder Canal are performed twice a year to assess the effect of the remediation on surface water quality.

Samples were not collected during this reporting period. The next scheduled sampling event is November 2000.

6.0 GAS MONITORING

Gas monitoring at the gas vents (both before and after the carbon canister), gas monitoring piezometers, and the landfill perimeter is scheduled to be performed twice a year (Figure 2). Gas monitoring was not performed during this reporting period. The next scheduled sampling event is November 2000.

7.0 MAINTENANCE AND REPAIR

The remediation system operated efficiently and as expected throughout this period. Maintenance and repair activities occurring during this reporting period are summarized below.

In July:

- The FeREMEDE® drum was replaced.
- All flow sensors were found to be biofouled. They were cleaned, inspected, and returned to working order.

In August:

- Discharge lines flushed with high pressure hose.
- The FeREMEDE® drum was replaced.

In September:

- Perimeter of wetland cells inspected and over-growth trimmed.

APPENDIX A

TABLE 1
GROUNDWATER SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_INFLUENT
Sample ID		AST_EFFLUENT	AST_EFFLUENTDUP	AST_EFFLUENT	AST_EFFLUENTDUP	AST_INFLUENT
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft.)		-	-	-	-	-
Date Sampled		08/16/00	08/16/00	09/20/00	09/20/00	08/16/00
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles						
1,1,1-Trichloroethane	UG/L	10 U	NA	10 U	NA	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	NA	10 U	NA	10 U
1,1,2-Trichloroethane	UG/L	10 U	NA	10 U	NA	10 U
1,1-Dichloroethane	UG/L	10 U	NA	10 U	NA	10 U
1,1-Dichloroethene	UG/L	10 U	NA	10 U	NA	10 U
1,2-Dichloroethane	UG/L	10 U	NA	10 U	NA	10 U
1,2-Dichloroethene (total)	UG/L	10 U	NA	10 U	NA	0.9 J
1,2-Dichloropropane	UG/L	10 U	NA	10 U	NA	10 U
2-Hexanone	UG/L	10 U	NA	10 U	NA	10 U
4-Methyl-2-Pentanone	UG/L	10 U	NA	10 U	NA	10 U
Acetone	UG/L	10 U	NA	10 U	NA	10 U
Benzene	UG/L	10 U	NA	10 U	NA	1 J
Bromodichloromethane	UG/L	10 U	NA	10 U	NA	10 U
Bromoform	UG/L	10 U	NA	10 U	NA	10 U
Bromomethane	UG/L	10 U	NA	10 U	NA	10 U
Carbon Disulfide	UG/L	10 U	NA	10 U	NA	10 U
Carbon Tetrachloride	UG/L	10 U	NA	10 U	NA	10 U
Chlorobenzene	UG/L	10 U	NA	10 U	NA	0.6 J
Chloroethane	UG/L	10 U	NA	10 U	NA	2 J
Chloroform	UG/L	10 U	NA	10 U	NA	10 U
Chloromethane	UG/L	10 U	NA	10 U	NA	10 U
Dibromochloromethane	UG/L	10 U	NA	10 U	NA	10 U
Ethylbenzene	UG/L	10 U	NA	10 U	NA	0.5 BJ
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	NA	10 U	NA	10 U

Flags assigned during chemistry validation are shown.

TABLE 1
GROUNDWATER SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_INFLUENT
Sample ID		AST_EFFLUENT	AST_EFFLUENTDUP	AST_EFFLUENT	AST_EFFLUENTDUP	AST_INFLUENT
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft.)		-	-	-	-	-
Date Sampled		08/16/00	08/16/00	09/20/00	09/20/00	08/16/00
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Volatiles						
Methylene Chloride	UG/L	10 U	NA	10 U	NA	0.3 BJ
Styrene	UG/L	10 U	NA	10 U	NA	10 U
Tetrachloroethene	UG/L	10 U	NA	10 U	NA	10 U
Toluene	UG/L	0.7 J	NA	10 U	NA	0.4 J
Total Xylenes	UG/L	0.1 BJ	NA	0.03 J	NA	2 BJ
Trichloroethene	UG/L	10 U	NA	10 U	NA	0.2 J
Vinyl Chloride	UG/L	10 U	NA	10 U	NA	10 U
cis-1,3-Dichloropropene	UG/L	10 U	NA	10 U	NA	10 U
trans-1,3-Dichloropropene	UG/L	10 U	NA	10 U	NA	10 U
Aroclor 1016 & 1242	UG/L	0.05 U	NA	NA	NA	NA
Aroclor 1221	UG/L	0.05 U	NA	NA	NA	NA
Aroclor 1248	UG/L	0.05 U	NA	NA	NA	NA
Aroclor 1254	UG/L	0.05 U	NA	NA	NA	NA
Aroclor 1260	UG/L	0.05 U	NA	NA	NA	NA
Aluminum	UG/L	39	NA	30.0 U	30.0 U	30.0 U
Antimony	UG/L	75.0 U	NA	75.0 U	75.0 U	75.0 U
Arsenic	UG/L	18	21	10.0 U	10.0 U	10.0 U
Barium	UG/L	120	NA	76	73	69
Beryllium	UG/L	1.0 U	NA	1.0 U	1.0 U	1.0 U
Cadmium	UG/L	3.0 U	NA	3.0 U	3.0 U	3.0 U
Calcium	UG/L	76900	NA	92200	90500	107000
Chromium	UG/L	5.0 U	NA	5.0 U	5.0 U	5.0 U

Flags assigned during chemistry validation are shown.

TABLE 1
GROUNDWATER SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_INFLUENT
Sample ID		AST_EFFLUENT	AST_EFFLUENTDUP	AST_EFFLUENT	AST_EFFLUENTDUP	AST_INFLUENT
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft.)		-	-	-	-	-
Date Sampled		08/16/00	08/16/00	09/20/00	09/20/00	08/16/00
Parameter	Units		Field Duplicate (1-1)		Field Duplicate (1-1)	
Cobalt	UG/L	5.0 U	NA	5.0 U	5.0 U	8
Copper	UG/L	5.0 U	NA	5.0 U	5.0 U	5.0 U
Iron	UG/L	39600	NA	5430	5290	33300
Lead	UG/L	20.0 U	NA	20.0 U	20.0 U	20.0 U
Magnesium	UG/L	20100	NA	25900	25300	27100
Manganese	UG/L	1250	NA	1050	1030	3440
Mercury	UG/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Molybdenum	UG/L	20.0 U	NA	20.0 U	20.0 U	20.0 U
Nickel	UG/L	8.0 U	NA	5.0 U	6	8.0 U
Potassium	UG/L	4600	NA	6700	6400	4000
Selenium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Silver	UG/L	10.0 U	NA	10.0 U	10.0 U	10.0 U
Sodium	UG/L	32000	NA	38600	36800	47900
Strontium	UG/L	495	NA	522	503	601
Thallium	UG/L	75.0 U	NA	75.0 U	75.0 U	75.0 U
Tin	UG/L	50.0 U	NA	50.0 U	50.0 U	50.0 U
Titanium	UG/L	5.0 U	NA	5.0 U	5.0 U	5.0 U
Vanadium	UG/L	5	NA	5.0 U	5.0 U	5.0 U
Zinc	UG/L	41	NA	10.0 U	10.0 U	10.0 U
Total Dissolved Solids	MG/L	410	420	516	520	NA
Total Phenols	MG/L	NA	NA	0.007	0.007	NA
Total Suspended Solids	MG/L	63	55	14	16	NA

Flags assigned during chemistry validation are shown.

TABLE 1
GROUNDWATER SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		AS_INFLUENT
Sample ID		AST_INFLUENT
Matrix		Groundwater
Depth Interval (ft.)		-
Date Sampled		09/20/00
Parameter	Units	
Volatiles		
1,1,1-Trichloroethane	UG/L	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U
1,1,2-Trichloroethane	UG/L	10 U
1,1-Dichloroethane	UG/L	10 U
1,1-Dichloroethene	UG/L	10 U
1,2-Dichloroethane	UG/L	10 U
1,2-Dichloroethene (total)	UG/L	10 U
1,2-Dichloropropane	UG/L	10 U
2-Hexanone	UG/L	10 U
4-Methyl-2-Pentanone	UG/L	10 U
Acetone	UG/L	10 U
Benzene	UG/L	10 U
Bromodichloromethane	UG/L	10 U
Bromoform	UG/L	10 U
Bromomethane	UG/L	10 U
Carbon Disulfide	UG/L	10 U
Carbon Tetrachloride	UG/L	10 U
Chlorobenzene	UG/L	1 J
Chloroethane	UG/L	3 J
Chloroform	UG/L	10 U
Chloromethane	UG/L	10 U
Dibromochloromethane	UG/L	10 U
Ethylbenzene	UG/L	0.07 J
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U

Flags assigned during chemistry validation are shown.

TABLE 1
GROUNDWATER SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		AS_INFLUENT
Sample ID		AST_INFLUENT
Matrix		Groundwater
Depth Interval (ft.)		-
Date Sampled		09/20/00
Parameter	Units	
Volatiles		
Methylene Chloride	UG/L	0.3 BJ
Styrene	UG/L	10 U
Tetrachloroethene	UG/L	10 U
Toluene	UG/L	10 U
Total Xylenes	UG/L	0.7 J
Trichloroethene	UG/L	10 U
Vinyl Chloride	UG/L	10 U
cis-1,3-Dichloropropene	UG/L	10 U
trans-1,3-Dichloropropene	UG/L	10 U
Aroclor 1016 & 1242	UG/L	NA
Aroclor 1221	UG/L	NA
Aroclor 1248	UG/L	NA
Aroclor 1254	UG/L	NA
Aroclor 1260	UG/L	NA
Aluminum	UG/L	30.0 U
Antimony	UG/L	75.0 U
Arsenic	UG/L	10.0 U
Barium	UG/L	60
Beryllium	UG/L	1.0 U
Cadmium	UG/L	3.0 U
Calcium	UG/L	96400
Chromium	UG/L	5.0 U

Flags assigned during chemistry validation are shown.

TABLE 1
GROUNDWATER SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		AS_INFLUENT
Sample ID		AST_INFLUENT
Matrix		Groundwater
Depth Interval (ft.)		-
Date Sampled		09/20/00
Parameter	Units	
Cobalt	UG/L	9
Copper	UG/L	5.0 U
Iron	UG/L	29500
Lead	UG/L	20.0 U
Magnesium	UG/L	24300
Manganese	UG/L	3210
Mercury	UG/L	0.2 U
Molybdenum	UG/L	20.0 U
Nickel	UG/L	8.0 U
Potassium	UG/L	3700
Selenium	UG/L	5.0 U
Silver	UG/L	10.0 U
Sodium	UG/L	38700
Strontium	UG/L	497
Thallium	UG/L	75.0 U
Tin	UG/L	50.0 U
Titanium	UG/L	5.0 U
Vanadium	UG/L	5.0 U
Zinc	UG/L	13
Total Dissolved Solids	MG/L	NA
Total Phenols	MG/L	NA
Total Suspended Solids	MG/L	NA

Flags assigned during chemistry validation are shown.

TABLE 1
FIELD QC SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		FIELDQC	FIELDQC
Sample ID		TRIP BLANK	TRIP BLANK
Matrix		Quality Control	Quality Control
Depth Interval (ft.)		-	-
Date Sampled		08/16/00	09/20/00
Parameter	**Units**	Trip Blank (1-1)	Trip Blank (1-1)
Volatiles			
1,1,1-Trichloroethane	UG/L	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U
2-Hexanone	UG/L	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U
Acetone	UG/L	10 U	10 U
Benzene	UG/L	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U
Bromoform	UG/L	10 U	10 U
Bromomethane	UG/L	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U
Chloroethane	UG/L	10 U	10 U
Chloroform	UG/L	10 U	10 U
Chloromethane	UG/L	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U
Ethylbenzene	UG/L	0.07 BJ	0.05 J
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	10 U

Flags assigned during chemistry validation are shown.

TABLE 1
FIELD QC SAMPLE RESULTS
FORT EDWARD LANDFILL

Location ID		FIELDQC	FIELDQC
Sample ID		TRIP BLANK	TRIP BLANK
Matrix		Quality Control	Quality Control
Depth Interval (ft.)		-	-
Date Sampled		08/16/00	09/20/00
Parameter	**Units**	Trip Blank (1-1)	Trip Blank (1-1)
Volatiles			
Methylene Chloride	UG/L	0.2 BJ	0.1 BJ
Styrene	UG/L	10 U	10 U
Tetrachloroethene	UG/L	0.05 BJ	10 U
Toluene	UG/L	0.32	0.1 J
Total Xylenes	UG/L	0.33 BJ	0.3 J
Trichloroethene	UG/L	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U

Flags assigned during chemistry validation are shown.