



QUARTERLY OPERATING REPORT JULY-SEPTEMBER 1999

WORK ASSIGNMENT D003825-1

**FORT EDWARD LANDFILL
FORT EDWARD (T)**

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

Prepared for:
NEWYORKSTATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York

John P. Cahill, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Greiner Woodward Clyde
282 Delaware Avenue
Buffalo, New York 14202

QUARTERLY REPORT OF OPERATIONS

JULY 1 TO SEPTEMBER 30, 1999

FOR THE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

WORK ASSIGNMENT NO. D003825-1

FORT EDWARD LANDFILL

NYSDEC SITE NO. 5-58-001

FORT EDWARD (T), WASHINGTON (C), NEW YORK

SUBMITTED BY:

URS GREINER WOODWARD CLYDE

282 DELAWARE AVENUE

BUFFALO, NEW YORK 14202

TABLE OF CONTENTS

	<u>Page No.</u>
1.0 INTRODUCTION	1
2.0 PROCESS MONITORING	1
3.0 PERFORMANCE MONITORING	2
4.0 GROUNDWATER MONITORING	4
5.0 SURFACE WATER MONITORING	4
6.0 MAINTENANCE AND REPAIR	4

TABLES

	<u>Following Page No.</u>
Table 1 Process Monitoring Summary	2
Table 2 Volatile Organic Compounds (VOCs) Summary of Analytical Results From Groundwater Treatment System	2
Table 3 Metals Summary of Analytical Results From Groundwater Treatment System	2
Table 4 Miscellaneous Parameters Summary of Analytical Results From Groundwater Treatment System	2

APPENDICES

Appendix A Analytical Results	
-------------------------------	--

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, 1999. 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 second of a scheduled six 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.

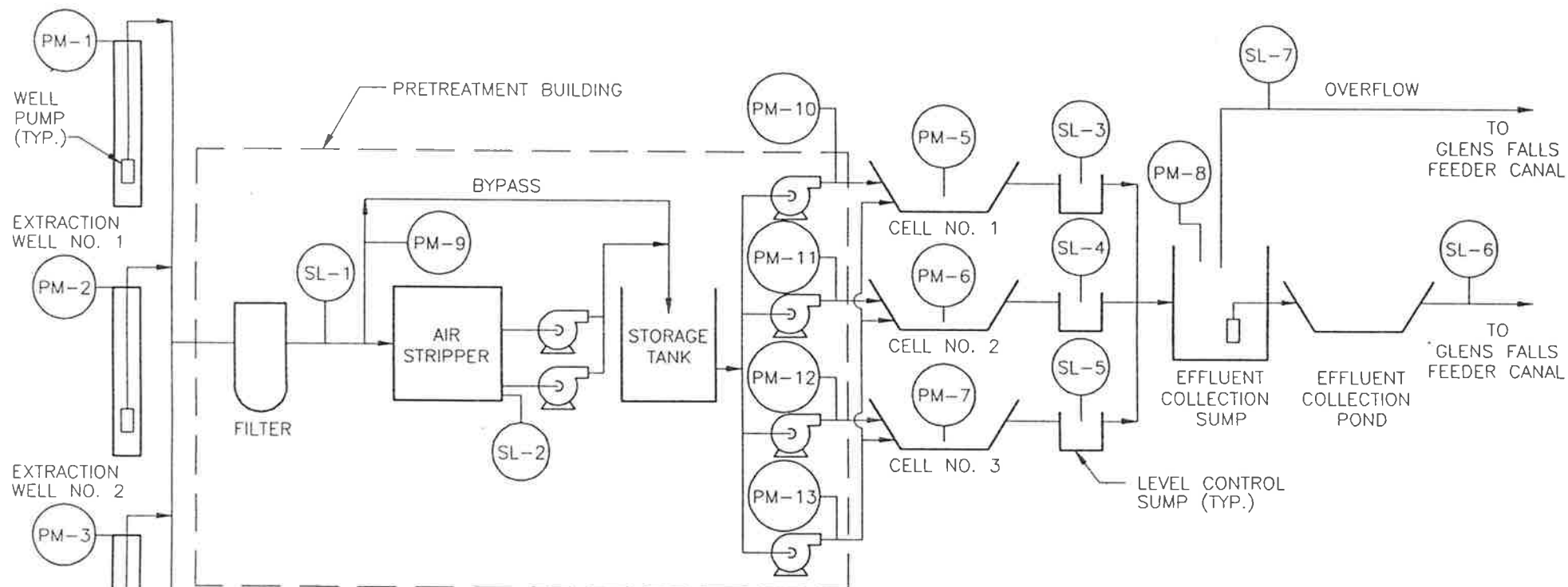
The air stripper was installed to remove volatile organic compounds (VOCs) from the water. During the start-up period, the concentrations of VOCs in the influent were below the discharge criteria, therefore, the air stripper was not needed. As a result, the air stripper was bypassed in the treatment system on October 29, 1998 and 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 URSGWC 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



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

(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.

Analytical results from 10 samples are included in this report. (Four samples from the previous period are included because this data was not available at the time the report was issued). 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 (TDS) by Standard Method SM2540C, total suspended solids (TSS) by SM2540D, and total phenols by SM5530B.

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

During this operating period, the discharge criteria for three analytical parameters were exceeded in one or more sampling events at the point of compliance (polishing pond effluent). These parameters were cobalt, iron, and total dissolved solids. Exceedences are discussed below.

TABLE 1
PROCESS MONITORING SUMMARY

MONITORING LOCATION	PARAMETER	JULY⁽³⁾ 1999	AUGUST 1999	SEPTEMBER 1999
PM-1	Level (ft. of H ₂ O)	4.8 - 11.6	11.7	5.6 - 10.1
PM-2	Level (ft. of H ₂ O)	7.8 - 17.8	17.7	9 - 15.2
PM-3	Level (ft. of H ₂ O)	7.4 - 20.3	20.1	11.6 - 17
PM-4	Level (ft. of H ₂ O)	4.8	4.8	4.8
PM-5	Level (ft. of H ₂ O)	2.34 - 2.82	2.23 - 2.58	2.06 - 2.69
PM-6	Level (ft. of H ₂ O)	2.39 - 2.62	2.37 - 2.61	2.32 - 2.55
PM-7	Level (ft. of H ₂ O)	2.64 - 2.68	2.55 - 2.63	2.48 - 2.67
PM-8	Level (ft. of H ₂ O)	4.8	4.8	4.8
PM-9	Flow (gpm)	18.5 - 20.1	19.1	22 - 31.8
PM-10	Flow (gpm) ⁽¹⁾	7.7 - 17.9	14.1	11.2 - 16.1
PM-11	Flow (gpm) ⁽¹⁾	7.9 - 22	26.3	7.7 - 9.5
PM-12	Flow (gpm) ⁽¹⁾	0 - 5.7	12.8	0 - 8.6
PM-13	Flow (gpm) ^{(1) (2)}	0 - 18.7	0	6.5 - 14

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) Sample dates were July 7 and 28, 2000. The ranges for the level and flow measurements are shown.

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

		CONCENTRATION, (µg/l)				CONCENTRATION, (µg/l)				Conc. (µg/l)	Conc. (µg/l)
	Discharge Criteria (µg/l)	June 1999				July 1999				August 1999	September 1999
Contaminant		10 th	16 th	23 rd	30 th	7 th	14 th	22 nd	28 th	18 th	23 rd
		I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E
1,2 Dichloroethene (Total)	30	3:ND	NA:ND	NA:ND	NA:ND	NA:0.3	0.7:ND	NA:0.1	NA:ND	1:ND	NA:ND
Acetone	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:13	3:19	NA:14	NA:ND	ND:ND	NA:ND
Bromodichloromethane	30	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	NA:ND
Bromoform	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:0.2	ND:ND	NA:ND
Benzene	10	4:ND	NA:ND	NA:ND	NA:ND	NA:ND	4:ND	NA:0.09	NA:ND	0.8:ND	NA:ND
Chlorobenzene	10	1:0.2	NA:ND	NA:ND	NA:ND	NA:ND	2:ND	NA:ND	NA:ND	1:ND	NA:ND
Chloroethane	20	3:ND	NA:ND	NA:ND	NA:ND	NA:ND	3:ND	NA:0.3	NA:ND	3:ND	NA:ND
Chloroform	150	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:0.08	NA:ND	ND:ND	NA:ND
Ethylbenzene	10	5:0.2	NA:ND	NA:ND	NA:ND	NA:ND	0.8:ND	NA:0.02	NA:ND	.09:.07	NA:ND

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

Only detected analytes are included.

Bold type indicates result exceeds standard.

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

		CONCENTRATION, (µg/l)				CONCENTRATION, (µg/l)				Conc. (µg/l)	Conc. (µg/l)
	Discharge Criteria (µg/l)	June 1999				July 1999				August 1999	September 1999
Contaminant		10 th	16 th	23 rd	30 th	7 th	14 th	22 nd	28 th	18 th	23 rd
		I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E
Toluene	10	0.6:0.5	NA:0.3	NA:0.1	NA:0.5	NA:2	0.1:ND	NA:0.5	NA:0.7	0.1:0.2	NA:0.3
Total Xylenes	10	5:0.8	NA:0.2	NA:0.06	NA:0.1	NA:ND	5:ND	NA:0.2	NA:ND	0.4:0.3	NA:ND
Trichloroethene	NV	2:ND	NA:ND	NA:ND	NA:ND	NA:ND	0.6:ND	NA:0.1	NA:ND	2:ND	NA:ND
Bromomethane	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:0.2	NA:ND	ND:ND	NA:ND
Tetrachloroethene	NV	ND:0.04	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	NA:ND
Methylene Chloride	50	ND:0.2	NA:0.2	NA:ND	NA:0.2	NA:0.8	0.3:0.4	NA:0.5	NA:0.6	0.3:ND	NA:0.2
1,1 Dichloroethane	30	0.6:ND	NA:ND	NA:ND	NA:ND	NA:ND	0.6:ND	NA:ND	NA:ND	0.6:ND	NA:ND
Styrene	NV	0.2:0.3	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	NA:ND
Methyl Ethyl Ketone (2- Butanone)	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:7	4:4	NA:3	NA:ND	ND:ND	NA:ND

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

Only detected analytes are included.

Bolt type indicates result exceeds standard.

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

		CONCENTRATION, (µg/l)				CONCENTRATION, (µg/l)				Conc. (µg/l)	Conc. (µg/l)
	Discharge Criteria (µg/l)	June 1999				July 1999				August 1999	September 1999
Contaminant		10 th	16 th	23 rd	30 th	7 th	14 th	22 nd	28 th	18 th	23 rd
		I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E
Aluminum	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:59	ND:ND	NA:115	NA:ND	ND:ND	48:348
Antimony	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Arsenic	150	ND:ND	NA:ND	NA:ND	NA:ND	NA:10	ND:ND	NA:17	NA:12	ND:ND	ND:ND
Barium	3500	82:36	NA:41	NA:43	NA:70	NA:155	94:75	NA:186	NA:142	86:90	239:67
Cadmium	1	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Calcium	NV	116:92.2	NA:98.1	NA:103	NA:88.7	NA:128	113:82.4	NA:123	NA:109	112:103	126:57.8
Chromium	210	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Cobalt	5	5:ND	NA:ND	NA:ND	NA:ND	NA:6	8.0:ND	NA:5	NA:ND	9:ND	8:ND
Copper	24	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Iron	300	23,100: 1,090	NA:766	NA:280	NA: 476	NA: 7,470	32,900:98	NA: 24,000	NA: 4,500	32,700:210	105,000: 1,150
Lead	3.2	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Magnesium	NV	32.2:35.4	NA:36.1	NA:37.5	NA:36.5	NA:37.8	30.8:33.5	NA:35.8	NA:32.6	31.7:33.3	30.4:15

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

Only detected analytes are included.

Bolt type indicates result exceeds standard.

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

		CONCENTRATION, (µg/l)				CONCENTRATION, (µg/l)				Conc. (µg/l)	Conc. (µg/l)
	Discharge Criteria (µg/l)	June 1999				July 1999				August 1999	September 1999
Contaminant		10 th	16 th	23 rd	30 th	7 th	14 th	22 nd	28 th	18 th	23 rd
		I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E	I : E
Manganese	NV	3,000:2,290	NA:715	NA:162	NA:1,270	NA:1,380	3,030:103	NA:1,400	NA:786	3,060:437	3,230:987
Nickel	96	5.0:10.0	NA:5	NA:6	NA:6	NA:12	5:5	NA:9	NA:8	5:ND	12:ND
Potassium	NV	5.8:4.8	NA:4.7	NA:2.8	NA:2.5	NA:11.8	5.8:2.3	NA:11.2	NA:10.4	5.3:6.6	6.4:6.6
Silver	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Sodium	NV	56.8:61.2	NA:62.7	NA:64.7	NA:60.6	NA:73	54.1:54.5	NA:62.9	NA:62.4	54.9:60.4	63.4:20.1
Thallium	NV	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:ND	NA:ND	ND:ND	ND:ND
Vanadium	14	ND:ND	NA:ND	NA:ND	NA:ND	NA:ND	ND:ND	NA:7	NA:ND	ND:ND	ND:ND
Zinc	170	48:70	NA:55	NA:23	NA:25	NA:ND	33:18	NA:12	NA:ND	28:35	47:110

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

Only detected analytes are included.

Bolt type indicates result exceeds standard.

**TABLE 4 - MISCELLANEOUS PARAMETERS
SUMMARY OF ANALYTICAL RESULTS
FROM GROUNDWATER TREATMENT SYSTEM**

		CONCENTRATION (mg/l)				CONCENTRATION (mg/l)				(mg/l)	(mg/l)
	Discharge Criteria	June 1999				July 1999				August 1999	September 1999
Contaminant		10 th	16 th	23 rd	30 th	7 th	14 th	22 nd	28 th	18 th	23 rd
		E	E	E	E	E	E	E	E	E	E
Total Dissolved Solids	500 mg/l	622	663	666	617	702	547	747	676	643	309
Total Suspended Solids	50 mg/l	10	5	10	17	25	3	17	21	6	11
Total Phenols	0.008 mg/l	0.007	0.003	0.008	0.006	0.003	0.005	0.004	0.002	ND	0.002
pH	6.0 - 9.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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

Only detected analytes are included.

Bolt type indicates result exceeds standard.

Cobalt: Cobalt exceeded the discharge criterion (5 µg/l) in one of the ten samples included in Table 3. This exceedence (6 µg/l) was only 1 µg /l over the criteria.

Iron: Iron exceeded the discharge criterion (300 µg/l) in seven of the ten samples included in Table 3.

Total Dissolved Solids (TDS): TDS exceeded the discharge criterion (500 mg/l) in nine of ten samples included in Table 4.

A comparison of analytical results from the previous report (April - June 1999) to this report show the following:

Cobalt concentrations decreased, and the number of exceedences decreased significantly.

The average concentration of iron decreased (from about 12 to 4 mg/l), and the number of exceedences decreased somewhat.

The average concentration of total dissolved solids and the number of exceedences is comparable for this and the last report.

It is significant to note that four parameters (lead, nickel, total suspended solids, and total phenols) that exceeded discharge criteria in the previous report were not above the criteria in this report.

In general, effluent quality has significantly improved based on data from this report. Only iron and total dissolved solids are frequently being discharged at concentrations above their discharge criteria.

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 will occur in October 1999.

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 will occur in October 1999.

6.0 MAINTENANCE AND REPAIR

The remediation system operated efficiently throughout this period. Maintenance and repair activities are summarized below.

- Replaced FeREMEDE drum (7/14/00)
- Flushed out P-203 and piping with high pressure hose (7/22/00)
- Collection sump pump (W-4) and effluent collection sump (W-5) restored to full operation (9/16/00) after being off for approximately one week
- Computer (Operating Interface Terminal) fixed by Bob Wasner (vendor representative) on 9/23/00.

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 will occur in October 1999.

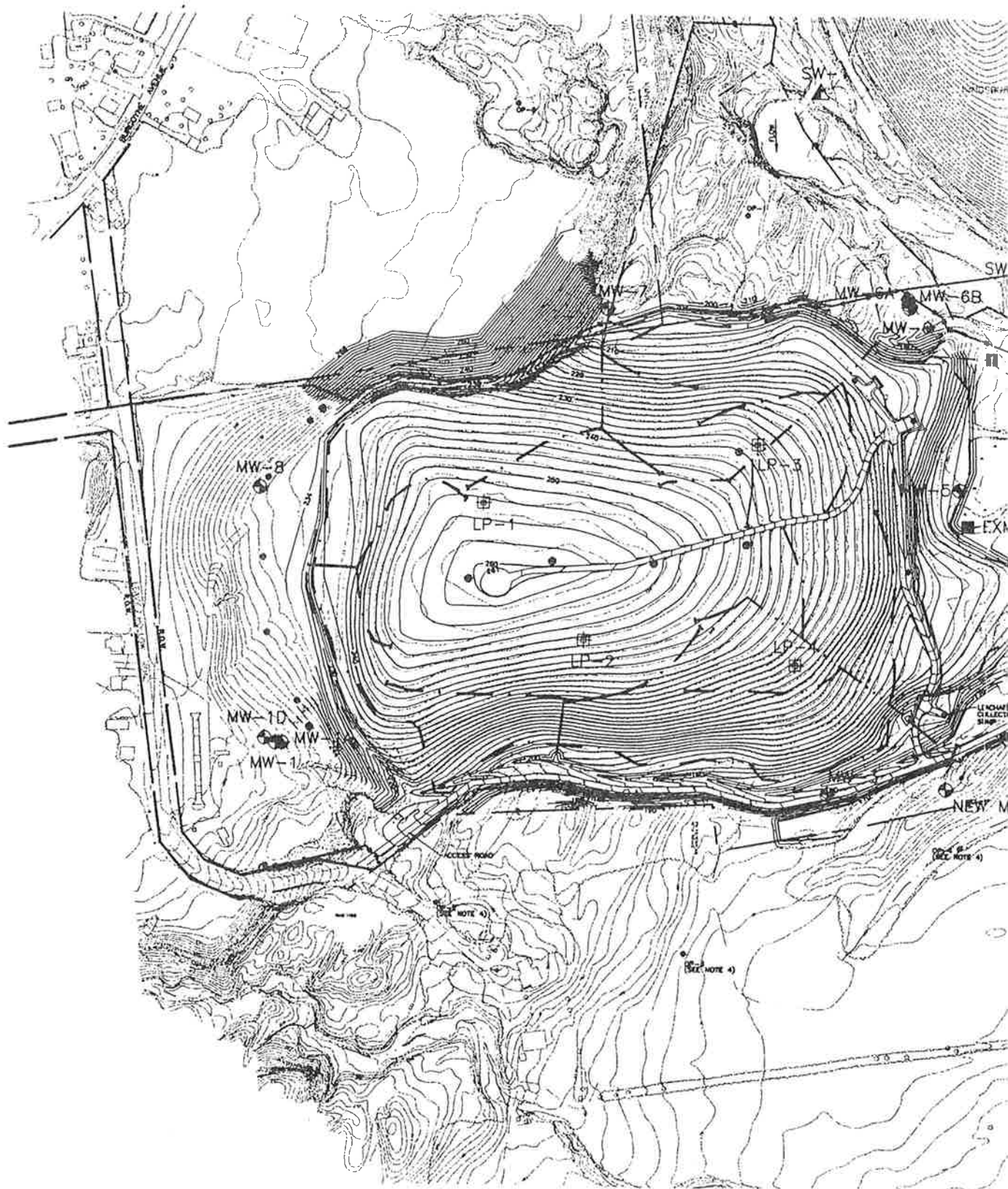
5.0 SURFACE WATER MONITORING

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 will occur in October 1999.

6.0 MAINTENANCE AND REPAIR

The remediation system operated efficiently throughout this period. Maintenance and repair activities are summarized below.

- Replaced FeREMEDE drum (7/14/00)
- Flushed out P-203 and piping with high pressure hose (7/22/00)
- Collection sump pump (W-4) and effluent collection sump (W-5) restored to full operation (9/16/00) after being off for approximately one week
- Computer (Operating Interface Terminal) fixed by Bob Wasner (vendor representative) on 9/23/00.



BASE MAPPING FOR THIS DRAWING V
FORT EDWARD LANDFILL REMEDIAL A

APPENDIX A

ANALYTICAL RESULTS

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT
Matrix		Water	Water	Water	Water	Water
Date Sampled		06/10/99	06/16/99	06/23/99	06/30/99	07/07/99
Parameter	Units					
Volatiles						
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1,1,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	10 U	10 U	10 U	0.3 J
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U	10 U	10 U
Acetone	UG/L	10 U	10 U	10 U	10 U	13 B
Benzene	UG/L	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	10 U	10 U	10 U
Bromomethane	UG/L	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	0.2 BJ	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
Chloroform	UG/L	10 U	10 U	10 U	10 U	10 U
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	0.2 BJ	10 U	10 U	10 U	10 U
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U	10 U	10 U	10 U	7 BJ
Methylene Chloride	UG/L	0.2 BJ	0.2 BJ	10 U	0.2 BJ	0.8 BJ
Styrene	UG/L	0.3 BJ	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	0.04 BJ	10 U	10 U	10 U	10 U
Toluene	UG/L	0.5 BJ	0.3 BJ	0.1 BJ	0.5 BJ	2 J
Total Xylenes	UG/L	0.8 BJ	0.2 BJ	0.06 BJ	0.1 BJ	10 U
Trichloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
PCBs						
Aroclor 1221	UG/L	NA	NA	NA	NA	NA
Aroclor 1016 /1242	UG/L	NA	NA	NA	NA	NA
Aroclor 1248	UG/L	NA	NA	NA	NA	NA
Aroclor 1254	UG/L	NA	NA	NA	NA	NA
Aroclor 1260	UG/L	NA	NA	NA	NA	NA

ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT
Matrix		Water	Water	Water	Water	Water
Date Sampled		06/10/99	06/16/99	06/23/99	06/30/99	07/07/99
Parameter	Units					
Metals						
Aluminum	UG/L	30.0 U	30.0 U	30.0 U	30.0 U	59.0
Antimony	UG/L	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
Barium	UG/L	36.0	41.0	43.0	70.0	155
Beryllium	UG/L	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
Calcium	UG/L	92.2	98.1	103	88.7	128
Chromium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	6.0
Copper	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Iron	UG/L	1090	766	280	476	7470
Lead	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Magnesium	UG/L	35.4	36.1	37.5	36.5	37.8
Manganese	UG/L	2290	715	162	1270	1380
Mercury	UG/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	UG/L	10.0	5.0	6.0	6.0	12.0
Potassium	UG/L	4.8	4.7	2.8	2.5	11.8
Selenium	UG/L	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
Sodium	UG/L	61.2	62.7	64.7	60.6	73.0
Thallium	UG/L	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
Zinc	UG/L	70.0	55.0	23.0	25.0	10.0 U
MISC						
Total Dissolved Solids	MG/L	622	663	666	617	702
Total Phenols	MG/L	0.007	0.003	0.008	0.006	0.003
Total Suspended Solids	MG/L	10	5	10	17	25

U = Analyte not detected above reported quantitation/detection limit.

J = Estimated concentration detected below the quantitation limit.

B = Analyte also detected in method blank.

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT
Matrix		Water	Water	Water	Water	Water
Date Sampled		07/14/99	07/22/99	07/28/99	08/18/99	09/23/99
Parameter	Units					
Volatiles						
1,1,1-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene	UG/L	10 U	0.05 J	10 U	10 U	10 U
1,2-Dichloroethane	UG/L	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (total)	UG/L	10 U	0.1 J	10 U	10 U	10 U
1,2-Dichloropropane	UG/L	10 U	10 U	10 U	10 U	10 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone	UG/L	10 U	10 U	10 U	10 U	10 U
Acetone	UG/L	19 B	14 B	10 U	10 U	10 U
Benzene	UG/L	10 U	0.09 BJ	10 U	10 U	10 U
Bromodichloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Bromoform	UG/L	10 U	10 U	0.2 BJ	10 U	10 U
Bromomethane	UG/L	10 U	0.2 BJ	10 U	10 U	10 U
Carbon Disulfide	UG/L	10 U	0.1 BJ	10 U	10 U	10 U
Carbon Tetrachloride	UG/L	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	UG/L	10 U	10 U	10 U	10 U	10 U
Chloroethane	UG/L	10 U	0.3 J	10 U	10 U	10 U
Chloroform	UG/L	10 U	0.08 BJ	10 U	10 U	10 U
Chloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	UG/L	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	UG/L	10 U	0.02 BJ	10 U	0.07 BJ	10 U
Methyl Ethyl Ketone (2-Butanone)	UG/L	4 BJ	3 BJ	10 U	10 U	10 U
Methylene Chloride	UG/L	0.4 BJ	0.5 BJ	0.6 BJ	10 U	0.2 BJ
Styrene	UG/L	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	UG/L	10 U	10 U	10 U	10 U	10 U
Toluene	UG/L	10 U	0.5 BJ	0.7 BJ	0.2 J	0.3 J
Total Xylenes	UG/L	10 U	0.2 BJ	10 U	0.3 BJ	10 U
Trichloroethene	UG/L	10 U	0.1 BJ	10 U	10 U	10 U
Vinyl Chloride	UG/L	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	UG/L	10 U	10 U	10 U	10 U	10 U
PCBs						
Aroclor 1221	UG/L	NA	NA	NA	0.5 U	NA
Aroclor 1016 /1242	UG/L	NA	NA	NA	0.5 U	NA
Aroclor 1248	UG/L	NA	NA	NA	0.5 U	NA
Aroclor 1254	UG/L	NA	NA	NA	0.5 U	NA
Aroclor 1260	UG/L	NA	NA	NA	0.5 U	NA

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT	AS_EFFLUENT
Sample I.D.		AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT	AST_EFFLUENT
Matrix		Water	Water	Water	Water	Water
Date Sampled		07/14/99	07/22/99	07/28/99	08/18/99	09/23/99
Parameter	Units					
Metals						
Aluminum	UG/L	30.0 U	115	30.0 U	30.0 U	348
Antimony	UG/L	75.0 U	75.0 U	75.0 U	75.0 U	75.0 U
Arsenic	UG/L	10.0 U	17.0	12.0	10.0 U	10.0 U
Barium	UG/L	75.0	186	142	90.0	67.0
Beryllium	UG/L	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
Calcium	UG/L	82.4	123	109	103	57.8
Chromium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	UG/L	5.0 U	5.0	5.0 U	5.0 U	5.0 U
Copper	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Iron	UG/L	98.0	24000	4500	210	1150
Lead	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Magnesium	UG/L	33.5	35.8	32.6	33.3	15.0
Manganese	UG/L	103	1400	786	437	987
Mercury	UG/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	UG/L	5.0	9.0	8.0	5.0 U	5.0 U
Potassium	UG/L	2.3	11.2	10.4	6.6	6.6
Selenium	UG/L	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
Sodium	UG/L	54.5	62.9	62.4	60.4	20.1
Thallium	UG/L	75.0 U	75.0 U	75.0 U	75.0 U	75.0 U
Vanadium	UG/L	5.0 U	7.0	5.0 U	5.0 U	5.0 U
Zinc	UG/L	18.0	12.0	10.0 U	35.0	110
MISC						
Total Dissolved Solids	MG/L	547	747	676	643	309
Total Phenols	MG/L	0.005	0.004	0.002	0.001 U	2
Total Suspended Solids	MG/L	3	17	21	6	11

U = Analyte not detected above reported quantitation/detection limit.

J = Estimated concentration detected below the quantitation limit.

B = Analyte also detected in method blank.

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_EFFLUENT	AS_INFLUENT	AS_INFLUENT	AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_EFFLUENTD	AST_INFLUENT	AST_INFLUENTD	AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water	Water	Water	Water
Date Sampled		09/23/99	06/10/99	06/10/99	07/14/99	08/18/99
Parameter	Units	DUP		DUP		
Volatiles						
1,1,1-Trichloroethane	UG/L	NA	10 U	NA	10 U	10 U
1,1,2,2-Tetrachloroethane	UG/L	NA	10 U	NA	10 U	10 U
1,1,2-Trichloroethane	UG/L	NA	10 U	NA	10 U	10 U
1,1-Dichloroethane	UG/L	NA	0.6 J	NA	0.6 J	0.6 J
1,1-Dichloroethene	UG/L	NA	10 U	NA	10 U	10 U
1,2-Dichloroethane	UG/L	NA	10 U	NA	10 U	10 U
1,2-Dichloroethene (total)	UG/L	NA	3 J	NA	0.7 J	1 J
1,2-Dichloropropane	UG/L	NA	10 U	NA	10 U	10 U
2-Hexanone	UG/L	NA	10 U	NA	10 U	10 U
4-Methyl-2-Pentanone	UG/L	NA	10 U	NA	10 U	10 U
Acetone	UG/L	NA	10 U	NA	3 BJ	10 U
Benzene	UG/L	NA	4 J	NA	4 J	0.8 J
Bromodichloromethane	UG/L	NA	10 U	NA	10 U	10 U
Bromoform	UG/L	NA	10 U	NA	10 U	10 U
Bromomethane	UG/L	NA	10 U	NA	10 U	10 U
Carbon Disulfide	UG/L	NA	10 U	NA	10 U	10 U
Carbon Tetrachloride	UG/L	NA	10 U	NA	10 U	10 U
Chlorobenzene	UG/L	NA	1 J	NA	2 J	1 J
Chloroethane	UG/L	NA	3 J	NA	3 J	3 J
Chloroform	UG/L	NA	10 U	NA	10 U	10 U
Chloromethane	UG/L	NA	10 U	NA	10 U	10 U
Dibromochloromethane	UG/L	NA	10 U	NA	10 U	10 U
Ethylbenzene	UG/L	NA	5 BJ	NA	0.8 J	0.09 BJ
Methyl Ethyl Ketone (2-Butanone)	UG/L	NA	10 U	NA	4 BJ	10 U
Methylene Chloride	UG/L	NA	10 U	NA	0.3 BJ	0.3 BJ
Styrene	UG/L	NA	0.2 J	NA	10 U	10 U
Tetrachloroethene	UG/L	NA	10 U	NA	10 U	10 U
Toluene	UG/L	NA	0.6 J	NA	0.1 J	0.1 J
Total Xylenes	UG/L	NA	5 BJ	NA	5 J	0.4 BJ
Trichloroethene	UG/L	NA	2 J	NA	0.6 J	2 J
Vinyl Chloride	UG/L	NA	10 U	NA	10 U	10 U
cis-1,3-Dichloropropene	UG/L	NA	10 U	NA	10 U	10 U
trans-1,3-Dichloropropene	UG/L	NA	10 U	NA	10 U	10 U
PCBs						
Aroclor 1221	UG/L	NA	NA	NA	NA	NA
Aroclor 1016 /1242	UG/L	NA	NA	NA	NA	NA
Aroclor 1248	UG/L	NA	NA	NA	NA	NA
Aroclor 1254	UG/L	NA	NA	NA	NA	NA
Aroclor 1260	UG/L	NA	NA	NA	NA	NA

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_EFFLUENT	AS_INFLUENT	AS_INFLUENT	AS_INFLUENT	AS_INFLUENT
Sample I.D.		AST_EFFLUENTD	AST_INFLUENT	AST_INFLUENTD	AST_INFLUENT	AST_INFLUENT
Matrix		Water	Water	Water	Water	Water
Date Sampled		09/23/99	06/10/99	06/10/99	07/14/99	08/18/99
Parameter	Units	DUP		DUP		
Metals						
Aluminum	UG/L	321	30.0 U	30.0 U	30.0 U	30.0 U
Antimony	UG/L	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
Barium	UG/L	68	82.0	80.0	94.0	86.0
Beryllium	UG/L	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
Calcium	UG/L	58.8	116	116	113	112
Chromium	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cobalt	UG/L	5.0 U	5.0	6.0	8.0	9.0
Copper	UG/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Iron	UG/L	1110	23100	23100	32900	32700
Lead	UG/L	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Magnesium	UG/L	15.2	32.2	31.9	30.8	31.7
Manganese	UG/L	990	3000	2990	3030	3060
Mercury	UG/L	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	UG/L	5.0 U	5.0	5.0 U	5.0	5.0
Potassium	UG/L	6.7	5.8	5.7	5.8	5.3
Selenium	UG/L	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
Sodium	UG/L	20.4	56.8	55.6	54.1	54.9
Thallium	UG/L	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
Zinc	UG/L	112	48.0	47.0	33.0	28.0
MISC						
Total Dissolved Solids	MG/L	315	NA	NA	NA	NA
Total Phenols	MG/L	0.005	NA	NA	NA	NA
Total Suspended Solids	MG/L	12	NA	NA	NA	NA

U = Analyte not detected above reported quantitation/detection limit.

J = Estimated concentration detected below the quantitation limit.

B = Analyte also detected in method blank.

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_INFLUENT
Sample I.D.		AST_INFLUENT
Matrix		Water
Date Sampled		09/23/99
Parameter	Units	
Volatiles		
1,1,1-Trichloroethane	UG/L	NA
1,1,2,2-Tetrachloroethane	UG/L	NA
1,1,2-Trichloroethane	UG/L	NA
1,1-Dichloroethane	UG/L	NA
1,1-Dichloroethene	UG/L	NA
1,2-Dichloroethane	UG/L	NA
1,2-Dichloroethene (total)	UG/L	NA
1,2-Dichloropropane	UG/L	NA
2-Hexanone	UG/L	NA
4-Methyl-2-Pentanone	UG/L	NA
Acetone	UG/L	NA
Benzene	UG/L	NA
Bromodichloromethane	UG/L	NA
Bromoform	UG/L	NA
Bromomethane	UG/L	NA
Carbon Disulfide	UG/L	NA
Carbon Tetrachloride	UG/L	NA
Chlorobenzene	UG/L	NA
Chloroethane	UG/L	NA
Chloroform	UG/L	NA
Chloromethane	UG/L	NA
Dibromochloromethane	UG/L	NA
Ethylbenzene	UG/L	NA
Methyl Ethyl Ketone (2-Butanone)	UG/L	NA
Methylene Chloride	UG/L	NA
Styrene	UG/L	NA
Tetrachloroethene	UG/L	NA
Toluene	UG/L	NA
Total Xylenes	UG/L	NA
Trichloroethene	UG/L	NA
Vinyl Chloride	UG/L	NA
cis-1,3-Dichloropropene	UG/L	NA
trans-1,3-Dichloropropene	UG/L	NA
PCBs		
Aroclor 1221	UG/L	NA
Aroclor 1016 /1242	UG/L	NA
Aroclor 1248	UG/L	NA
Aroclor 1254	UG/L	NA
Aroclor 1260	UG/L	NA

**ANALYTICAL SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		AS_INFLUENT
Sample I.D.		AST_INFLUENT
Matrix		Water
Date Sampled		09/23/99
Parameter	Units	
Metals		
Aluminum	UG/L	48.0
Antimony	UG/L	75.0 U
Arsenic	UG/L	10.0 U
Barium	UG/L	239
Beryllium	UG/L	1.0 U
Cadmium	UG/L	3.0 U
Calcium	UG/L	126
Chromium	UG/L	5.0 U
Cobalt	UG/L	8.0
Copper	UG/L	5.0 U
Iron	UG/L	105000
Lead	UG/L	20.0 U
Magnesium	UG/L	30.4
Manganese	UG/L	3230
Mercury	UG/L	0.20 U
Nickel	UG/L	12.0
Potassium	UG/L	6.4
Selenium	UG/L	5.0 U
Silver	UG/L	10.0 U
Sodium	UG/L	63.4
Thallium	UG/L	75.0 U
Vanadium	UG/L	5.0 U
Zinc	UG/L	47.0
MISC		
Total Dissolved Solids	MG/L	NA
Total Phenols	MG/L	NA
Total Suspended Solids	MG/L	NA

U = Analyte not detected above reported quantitation/detection limit.
J = Estimated concentration detected below the quantitation limit.
B = Analyte also detected in method blank.

**ANALYTICAL FIELD QC SAMPLE RESULTS
FORT EDWARD LANDFILL
JUNE - SEPTEMBER, 1999**

Location I.D.		FIELDQC
Sample I.D.		TRIP BLANK
Matrix		Water
Date Sampled		09/23/99
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	10 U
Chloroethane	UG/L	10 U
Chloroform	UG/L	10 U
Chloromethane	UG/L	10 U
Dibromochloromethane	UG/L	10 U
Ethylbenzene	UG/L	10 U
Methyl Ethyl Ketone (2-Butanone)	UG/L	10 U
Methylene Chloride	UG/L	0.2 BJ
Styrene	UG/L	10 U
Tetrachloroethene	UG/L	10 U
Toluene	UG/L	0.2 J
Total Xylenes	UG/L	10 U
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

U = Analyte not detected above reported quantitation/detection limit.
J = Estimated concentration detected below the quantitation limit.
B = Analyte also detected in method blank.