Periodic Review Report (PRR)

April 2011 – April 2012
Fort Edward Landfill
Leavy Hollow Road
Fort Edward, NY 12828
Site ID# 558001

Prepared for:
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Prepared by:

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Submitted: June 6, 2012

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Report Submittal Date: June 6, 2012
Prepared by: Adam G. Fox, Jeffrey Pelczar, Nancy Garry

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Project Address: Leavy Hollow Road, Fort Edward, New York

I (we) certify that regarding the above referenced project and/or environmental assessment work:

Certification, Limitations, and Statement of Independence

For each instructional or engineering control identified for the site, I certify that all of the following statements are true;

(a) The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by DER;
(b) Nothing has occurred that would impair the ability of such a control to protect public health and the environment;
(c) Nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control; and
(d) Access to the site will continue to be provided to DER to evaluate the remedy, including access to evaluate the continued maintenance of this control.

This is certified as true and correct to the best of my (our) knowledge. The above information (and attachments) are subject to penalty for false statements under 18 U.S.C. section 1001.

Environmental Contractor: HRP Engineering, P.C.

By:

Nancy Garry, P.E.

LIST OF ABBREVIATIONS

BCP	Brownfield Cleanup Program
bgs	below ground surface
COC	Contaminants of Concern
DUSR	Data Usability Summary Report
EC	Engineering Controls
HRP	HRP Associates, Inc.
IC	Institutional Controls
LEL	Lower Explosive Limit
LTMP	Long Term Monitoring Plan
mg/kg	milligram per kilogram
NYSDEC	New York State Department of Environmental Conservation
O&M	Operations and Maintenance
PCB	Polychlorinated biphenyl
PID	Photoionization Detector
PRR	Periodic Review Report
QC	Quality Control
RA	Remedial Action
RACR	Remedial Action Completion Report
RI	Remedial Investigation
ROD	Record of Decision
Site	North Lawrence Oil Dump Site # 645013
SMP	Site Management Plan
SVOC	Semi-Volatile Organic Compound
TOC	Total Organic Compound
TOGS	Technical and Operations Guidance Series
ug/L	Micro grams per liter or parts per billion
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This document is required as an element of the remedial program at Fort Edward Landfill (hereinafter referred to as the "Site") located at Leavy Hollow Road, Fort Edward, Washington County, New York, under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The site remediation was conducted in conformance with *DER-10: Technical Guidance for Site Investigation and Remediation* (NYSDEC, June 2010). This report is intended to meet the requirements of the Site Management Plan (SMP).

A Periodic Review Report (PRR) will be submitted to the Department every twelve (12) months. The report will be prepared in accordance with NYSDEC DER-10 and submitted within 45 days of the end of each certification period.

2.0 SITE OVERVIEW

The Site is a mixed-waste landfill located in the Town of Fort Edward, New York (Figure 1). The Site is roughly 23 acres and is bounded by the Glens Falls Feeder Canal to the northeast; by a wooded area, private residences and commercial businesses (Burgoyne Avenue) to the northwest; by Leavy Hollow Lane and private residences to the west and southwest; by farm fields to the south and east; and by a bike path to the east.

The geology underlying the Site consists of variable thickness of glacially deposited soil underlain by black shale bedrock. The glacial soil consists of delta sands and interbedded sand-clay lenses. The deltaic sediments overlay lacustrine clay and glacial till. On site monitoring wells are screened in the shallow delta sands (MW-1, MW-2, MW-5, MW-6C, MW-7, and MW-8), the interbedded sand and clay (MW-2A and MW-6A), and the deeper lacustrine clays (MW-1A and MW-6B). The extraction wells are screened at the landfill waste/delta sand interface.

The landfill contains non-hazardous municipal waste and hazardous industrial waste, including polychlorinated biphenyl (PCB)-containing electrical components and solvents. The landfill requires continued site management including operation, maintenance and monitoring (OM&M) of the active leachate collection and treatment system, which has been in operation since late 1998 (Figure 2).

2.1 Site Description

Topography in the immediate vicinity of the site is characterized by undulating hills, interspersed with slopes and small depressions. The eastern portion of the site is distinguished as a flat, low-lying area which contains several substantial wetlands.

The Site remains unimproved with structures. A gravel road provides access to the top of the landfill and the wetland expansion areas to the east. Nearby residences are located to the south and the west.

2.2 Site History

The Fort Edward Landfill was used for the disposal of approximately 70% municipal waste and approximately 30% PCB-containing scrap capacitor waste from General Electric, Inc., as well as solvents, from 1969 to 1982. Following a rise in public concern regarding the use of PCBs in the late 1970s, investigation began on the Fort Edward Landfill Site among others, and the Site was placed on the New York State Registry of Inactive Hazardous Waste Sites (Site No. 5-58-001).

In 1984, the NYSDEC approved plans and specifications for a containment remedy for the landfill, but allowed the Town of Fort Edward to receive non-hazardous municipal waste until a waste management system was implemented. The landfill was closed in 1991, and a temporary soil cap was installed over the waste materials between 1990 and 1993.

The original on-site leachate collection and treatment system, which discharges treated water to the Glens Falls Feeder Canal to the northeast of the Site, consisted of:

- A groundwater/leachate collection trench and three extraction wells for plume control;
- An air stripper for treatment of VOCs;
- A holding tank;
- Three constructed wetland treatment cells consisting of phragmites plants;
- An effluent collection “polishing” pond; and
- And the implementation of site controls, including fencing and groundwater monitoring.

The landfill was covered with a multi-layer cap in 1997 and 1998. The leachate collection and treatment system was designed by URS beginning in 1995, and construction began in July 1997. The remedial system began operating in September 1998. In October 1998, the air stripper was taken off-line since the VOCs were sufficiently being removed by the constructed wetland treatment system (CWTS). The O&M of the treatment system and groundwater monitoring responsibilities were assigned to AECOM on June 19, 2007. O&M responsibilities were then transferred from AECOM to Aztech on May 28, 2009. Monitoring and maintenance reporting responsibilities were transferred to HRP in 2011, with Aztech still maintaining on-site OM&M activities.

2.2.1 Landfill Closure Activities

The Town of Fort Edward closed the landfill in 1990. Between 1990 and 1993, a temporary soil cap was in place over the waste mound. Since 1995, the following remedial actions have taken place:

- Site preparation required clearing and grubbing, removal of surficial debris, and installation of all temporary facilities including an on-site laboratory.

- Prior to installation of the final cover system, the entire landfill was rough graded. Over 110,000 cubic yards of stripped soils and excavated materials

were relocated and compacted along with 46,000 cubic yards of imported structural fill.

- The gas collection system consisted of a 760' subsurface cut-off trench, gas cutoff barrier, cap vents, header piping, 120 gas monitoring peizometers, and five activated carbon vapor treatment units.

- The leachate collection system consisted of extraction wells, stone-filled collection trenches, a 2,300 linear foot, watertight PVC sheetpile cutoff wall, over 1,000' of gravity drain pipe and force mains, and related connections to the leachate treatment system.

- Leachate was then pumped to one of three 1.5 acre constructed wetland treatment systems (CWTS), configured in parallel, where *Phragmites australis* was used to perform phytoremediation of remaining leachate contaminants.

- In order to prevent compaction during the planting of the CWTS cells, a low ground pressure (Snow Cat) dozer was used to spread the high organic topsoil material. Manual plantings were performed with special footwear. All plantings were subject to survivability requirements which included isolation from invasive species.

- The CWTS cells were subjected to three successive test phases during four months of startup testing and analysis. Treated water discharged to an effluent collection pond prior to off-site drainage through existing channels.

- Wetland disturbance from CWTS construction and landfill closure activities required the installation of an additional 2 acres of wetlands, in addition to the CWTS cells.

- Installation of the 144,000 square yard landfill cover included a multi-layered cover system, drainage swales, culverts, channels, downchutes, slope stabilization, aggregate roadways, gabion basket barriers, and stilling basins. Final restoration work placed topsoil and seed over 32 acres and installed 6,000 feet of security fence.

2.2.2 Current Status

The groundwater remedial system was operational for several years until the conveyance system was unable to convey the raw groundwater to the treatment building. The system was reconstructed in 2011 and the following improvements were implemented:

- A new 6" HDPE line was installed from the collection trench and three recovery wells to the treatment building to increase the conveyance capacity.
- Repair of the recovery wells and associated controls.
- Installation of a new telemetry control system in the treatment system building.
- Installation of a new roadway to the polishing pond influent.
- A new 4" HDPE line was installed from the CWTS collection sump to the inlet of the polishing pond.

- The outlet control structure of the Polishing Pond was reconstructed to prevent short circuiting of the pond.

The groundwater remedial system should remain in operation to treat elevated iron and volatile organic compound (VOC) concentrations.

3.0 EVALUATION OF REMEDY PERFORMANCE, EFFECTIVENESS AND PROTECTIVENESS

3.1 Remedial Action Objectives

Neither a SMP nor a Record of Decision (ROD) exist for the Fort Edward Landfill; however, an O&M Manual for the Site is available (URS, February 2000). A review of the O&M manual and *DER-10: Technical Guidance for Site Investigation and Remediation* (NYSDEC, June 2010) suggest the following remedial goals should be applied to the Fort Edward Landfill Site:

- Prevent ingestion of groundwater outside of the landfill boundaries with contaminant levels exceeding drinking water standards;
- Prevent contact with or inhalation of volatiles from contaminated groundwater;
- Prevent discharge of contaminants to surface water; and
- And maintenance and compliance of engineering and institutional controls.

3.2 Institutional and Engineering Control Plan

Institutional Controls at the Site consist of:

- Decision Document
- Groundwater Use Restriction
- Landuse Restriction
- Soil Management Plan
- Surface Water Use Restriction

Engineering Controls at the Site consist of:

- Fencing/access control
- A landfill cover system
- Subsurface barriers
- Groundwater containment
- Leachate collection
- Stormwater collection and conveyance
- Leachate treatment and polishing (pump & treat)
- Point-of-Entry Water Treatment

3.3 Monitoring Plan Compliance

3.3.1 Confirm Compliance with Monitoring Plan

Activity	Required Frequency		Compliance Dates
	Monthly	Five-Quarter	
Influent/Effluent Sampling	X		Monthly
Water Level Gauging		X	June 2011
Groundwater Sampling		X	June 2011

3.3.2 Description of Site Inspections

Operation and Maintenance Plan Compliance

Aztech Technologies, Inc. has performed Operation and Maintenance of the system in compliance with the treatment system's Operation and Maintenance Plan, since May 2009. Inspections are completed bi-weekly and recorded on an Inspection Form.

Evaluation of Treatment Units

The treatment units are operational but are not currently able to handle the flow from the collection trench and the three recovery wells due to fouling of the three (3) CWTS distribution pumps within the treatment building. Iron precipitate is fouling the pumps and distribution piping and preventing flow to the CWTS. Aztech Technologies, Inc. has been using air and treated water to clean out these lines on a bi-weekly basis. In order to remedy this situation, a clarifier has been proposed to be installed at the headworks of the treatment building to remove the iron sludge prior to the distribution system. This project is in the works and will be installed in the second quarter of 2012. The effectiveness of the remainder of the treatment system will be evaluated as part of a comprehensive Remedial System Optimization (RSO) that is being performed by HRP Engineering, P.C. The components of the RSO will include:

- Initial groundwater and surface water sampling
- Verification and evaluation of the capture of the landfill plume
- A review of the remedial system design documents (basis of design),
- An evaluation of the system operation to ensure the facility is operating as designed; and
- Recommendations for improvements in system performance

Inspections of the treatment system have indicated that the CWTS are short-circuiting. The influent from the treatment building is being discharged in an area of each cell that is adjacent to the outlet control structure. This discharge location prevents the process wastewater from being treated by the whole surface area of the individual treatment cells. A redesign of these cells will be included in the RSO report along with a cost to correct this issue.

Site Maintenance

Site Maintenance activities that have been completed include mowing of the site and the installation of a new roadway to the polishing pond influent. The new roadway provides better access to the polishing pond influent for future repairs as necessary.

There appears to be several trees, in the vicinity of the drainage swales, that are in need of removal to promote drainage off of the landfill cap.

The landfill gas exhaust vents are past there useful life and should be replaced. The carbon treatment for the vents has been circumvented or removed on most vents.

3.3.3 Performance and Effectiveness Monitoring

Influent and Effluent

The effluent limitations for the discharge to the Fort Edward Feeder Canal are as follows:

Analyte	Concentration (ug/L, Daily Maximum)*
Instantaneous pH (Range)	6.0 -9.0 Standard Units
Total Dissolved Solids	500,000
Total Suspended Solids	50,000
Arsenic	150
Barium	3,500 (Daily Average)
Cadmium	1
Chromium (Total)	210
Cobalt	5
Copper	24
Iron	300
Lead	3.2
Mercury	0.8
Nickel	9.6
Vanadium	14
Zinc	170
Vinyl Chloride	50
Chloroethane	20
Methylene Chloride	50
1,1-Dichloroethane	30
1,2-Dichloroethene (Total)	30
Chloroform	150
Bromodichloromethane	30
Benzene	10
Toluene	10
Chlorobenzene	10
Ethylbenzene	10

Analyte	Concentration (ug/L, Daily Maximum)*
Xylenes, Total	10
Phenols, Total Phenolics	8 (Daily Average)
Aroclor 1016 (PCB)	ND (0.065)
Aroclor 1221 (PCB)	ND (0.065)
Aroclor 1242 (PCB)	ND (0.065)

*Unless otherwise indicated

The effluent limitations in the table above are based on the NYSDEC, Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", dated June 1998. Using water class A, A-S, AA, AA-S, B, C (source of drinking water with fish propagation) – Type H(WS) and A(C).

The influent of the system is currently collecting only the leachate collection trench and two of the three groundwater recovery wells. The effluent from the system is currently not meeting the effluent discharge limitations for iron. Iron is often present in site groundwater above the NYSDEC TOGS 1.1.1 standard, and appears to be a natural condition of the site. In addition, the system effluent sampled in July 2011 had detections of PCB-121 (1.68 ug/l) and PCB-1242 (0.373 ug/l), which exceeded the NYSDEC TOGS 1.1.1 groundwater standard of 0.065 ug/l and the existing landfill discharge limits of 0.09 ug/l.

A full evaluation of the performance of the collection system to remedy this situation will be presented in the Remedial System Optimization.

Ground Water Well Level Monitoring

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the Site (Figure 2). Groundwater monitoring will be performed every 15 months to assess the performance of the remedy and in accordance with the OM&M Work Plan. Prior to sampling each well, a depth-to-water measurement is taken using an electronic water level indicator.

The following table lists the depths to groundwater measured:

Well ID	Elevation of riser *	Groundwater Elevation July 11 and 12, 2007	Groundwater Elevation October 27, 2008	Depth to Water June 29, 2011	Groundwater Elevation June 29, 2011	Well Depth (ft)
MW-1	**258.87**	221.56	220.35	35.55	223.32	48.60
MW-1A	**257.51**	218.59	227.00	38.35	219.16	65.07
MW-1D	**---**	---	---	41.68	---	>101
MW-2	**192.59**	184.43	184.57	7.68	184.91	18.24
MW-2A	**192.4**	183.13	183.67	8.72	183.68	26.80
MW-5	**---**	---	---	5.87	---	10.50
MW-06A	**193.61**	183.17	183.11	10.36	183.25	61.30
MW-6B	**193.68**	178.68	177.74	15.94	177.74	81.70
MW-6C	**193.08**	184.85	185.00	7.99	185.09	17.90
MW-7	**203.43**	187.63	186.46	16.07	187.36	27.50
MW-08	**240.24**	232.44	232.21	7.58	232.66	12.38
NEW-MW	**---**	---	---	6.65	---	22.13
UI-MW-1	**---**	---	---	36.55	---	---
UI-MW-2	**---**	---	---	41.60	---	---
UI-MW-3	**---**	---	---	60.08	---	67.40
UI-MW-4	**---**	---	---	5.93	---	7.57

* Elevation Data from URS 1995 survey

Groundwater Sampling and Analysis

Groundwater monitoring was conducted in June 2011 to satisfy the sampling frequency requirement as defined in the OM&M Work Plan. The OM&M work plan calls for sampling 16 onsite wells (MW-1, MW-1A, MW-1D, MW-2, MW-2A, MW-5, MW-6A, MW-6B, MW-6C, MW-7, MW-8, MW-NEW, UI-MW-1, UI-MW-2, UI-MW-3, and UI-MW-4). UI-MW-3 and MW-5 cannot be sampled because of damage to the wells' solid risers below grade.

Each monitoring well is purged of three well volumes using either a Monsoon® pump with low-flow sampling controller or a peristaltic pump, each with single-use disposable tubing. Prior to use at each monitoring well, the Monsoon® pump will be decontaminated by a liquinox bath followed by a distilled water rinse. New tubing is used at each well location.

After purging up to three well volumes of groundwater, the groundwater is pumped through a flow cell equipped with a multi-parameter probe (e.g., YSI®) and temperature, conductivity, pH, turbidity, dissolved oxygen, and oxidation/reduction potential of the water are recorded on the sampling logs. All groundwater samples are bottled in laboratory-provided containers. Samples are packed on ice, and submitted under standard Chain-of-Custody (COC) procedures to Adirondack Environmental Services, Inc. in Albany, New York. Groundwater samples will be analyzed for volatile organic compounds (VOC) by USEPA Method 8260, Contract Laboratory Program (CLP) Target Analyte List (TAL) metals, and polychlorinated

biphenyls (PCB) by Method 8082. A summary of the samples to be collected and their respective analysis is presented on Table 2.

Wells UI-MW-3 and MW-5 could not be sampled because of damage to the wells' solid risers below grade. UI-MW-1 and UI-MW-2 were also not sampled due to insufficient volume of water in the well. Therefore, groundwater samples were collected from a total of 12 monitoring wells. A duplicate sample, FD-1, was obtained from MW-7.

3.3.4 Summary of Monitoring

Groundwater monitoring was conducted in June 2011 and included the collection of groundwater samples from twelve monitoring wells MW-1, MW-1A, MW-1D, MW-2, MW-2A, MW-6A, MW-6B, MW-6C, MW-7, MW-8, MW-NEW, and UI-MW-4.

Out of the sixteen wells, three wells had detections of volatile organic compounds that exceeded the NYSDEC TOGS 1.1.1 groundwater standards for chlorobenzene, 1,2,4-trichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, toluene and methylene chloride. In addition, according to AECOM, MW-5 (which was not sampled during this period due to a damaged riser) was historically identified as having elevated VOC concentrations in groundwater, but has not been sampled in several years.

PCBs have not generally been detected in site groundwater. However, PCBs were detected in groundwater samples from MW-6 during the past two sampling events (2008 and 2011). PCBs were also detected in monitoring well UI-MW-4 during the June 2011 sampling event.

A total of fifteen metals were detected in groundwater at concentrations above the laboratory minimum detection limits. A total of six metals (aluminum, Iron, Magnesium, Manganese, Sodium, and Thallium) were detected in groundwater at concentrations exceeding the NYSDEC TOGS 1.1.1 standards and guidance values. All sampled monitoring wells, with the exception of the upgradient well MW-8, identified one or more metals at concentrations exceeding NYSDEC TOGS 1.1.1. The most common metal exceeding its respective standard was iron.

Tables 1 through 3 (following text) provide a summary of the groundwater sample analytical results for the June 2011 event. Depth to groundwater was measured at the time of sample collection.

Groundwater flow was determined to be to the east in the unconsolidated saturated zone. Groundwater flow direction is consistent with previous flow direction measurements. See Figure 2 for a site plan with 2011 groundwater flow depicted.

3.3.5 Comparisons to Remedial Objectives

The following volatile organic compounds exceeded their respective NYSDEC TOGS 1.1.1 groundwater standard of 5 ug/l: chlorobenzene (23 ug/l and 6.7 ug/l), 1,2,4-trichlorobenzene (37 ug/l), 1,3-dichlorobenzene (18 ug/l), 1,4-dichlorobenzene (6 ug/l), toluene (6.9 ug/l) and methylene chloride (6.7 ug/l). VOCs do not appear to be widely present at high concentrations in site groundwater.

Total PCBs exceeded the NYSDEC TOGS 1.1.1 groundwater standard of 0.09 ug/l in MW-6C (0.18ug/l) and UI-MW-4 (0.113 ug/l).

Six metals (aluminum, Iron, Magnesium, Manganese, Sodium, and Thallium) were detected in groundwater at concentrations exceeding the NYSDEC TOGS 1.1.1 standards and guidance values. All sampled monitoring wells, with the exception of the upgradient well MW-8, identified one or more metals at concentrations exceeding NYSDEC TOGS 1.1.1. The most common metal exceeding its respective standard was iron.

3.3.6 Monitoring Deficiencies

No monitoring deficiencies were noted. However, the following should be noted:

- Wells UI-MW-3 and MW-5 could not be sampled because of damage to the wells' solid risers below grade.
- UI-MW-1 and UI-MW-2 were also not sampled due to insufficient volume of water in the well.
- The soil vapor vents are not functioning properly and need to be serviced.

3.3.7 Conclusions and Recommendations

The existing groundwater remedial system should remain in operation to treat elevated metals and VOC concentrations. Five VOCs (1,2,4-Trichlorobenzene, 1,3- and 1,4-Dichlorobenzene, Chlorobenzene, and Methylene Chloride) were detected above NYSDEC TOGS 1.1.1 groundwater standards.

3.3.8 Surface Water Sampling and Analysis

Surface water sampling and analysis are not included in the current monitoring plan and so will not be discussed in this PRR. However, surface water sampling will be addressed in the facility's Remedial System Optimization.

4.0 COST EVALUATION

Sampling costs, including technician time, CWTS inspection are part of Aztech Technologies, Inc. contract with the NYSDEC. Lab costs are directly billed to the NYSDEC as part of a separate call-out contract with Adirondack Laboratories and now TestAmerica. Periodic Review Report preparation is expected to be approximately $9,500 per event (every fifteen months).

The installation of the influent clarifier will cost approximately $111,088 and the approval to move ahead with the installation was issued the week of April 2, 2012.

The monthly operation and maintenance during the reporting period averages $4,500 per month. This O&M cost is commensurate with the operation of a system of this scale. The site upgrades that were performed during the reporting period totaled $206,000 and is a reasonable cost for the system upgrades that were performed during this period.

The 5th quarterly sampling was estimated to be completed at $4,500. This line item is reasonable for the level of effort for groundwater monitoring. The sampling contractor's costs are not broken out in the call out contract for type of service performed, so this was the best estimate of the level of effort for these activities.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The periodic review process is used for determining if a remedy continues to be properly managed, as set forth in the Operation and Maintenance Manual, and if the remedy continues to be protective of human health and the environment. The remedial measures in place appear to be effective in protecting human health and the environment. OM&M of the treatment system should continue until such time as the goal of removing the Site's contaminants of concern to the extent possible has been achieved.

5.1 Conclusions

The following conclusions discuss the effectiveness of the site's remedial system in comparison to the applicable site remedial goals derived from the OM&M plan for the Site and DER-10.

1. Prevent ingestion of groundwater outside of the landfill boundaries with contaminant levels exceeding drinking water standards:

   Residential and commercial properties adjacent to the landfill have been connected to the municipal water supply thereby preventing the ingestion of impacted groundwater from private wells immediately adjacent to the Site. However the downgradient extent of the impacted groundwater plume is unknown.

   The sentinel monitoring network established for monitoring the performance of the leachate collection system is inadequate. MW-5 which has historically had the highest concentrations of COCs of all monitoring wells at the Site was unable to be sampled because of damage to the riser of the well below grade. This problem has been designated as severe because without an adequate monitoring network it is not possible to know evaluate the effectiveness of the remedy.

2. Prevent contact with or inhalation of volatiles from contaminated groundwater:

   Inhalation and contact with impacted vapors has been minimized by supplying homes adjacent to the landfill with municipal water. Groundwater impacts have not been observed in the vicinity of the homes adjacent to the landfill.

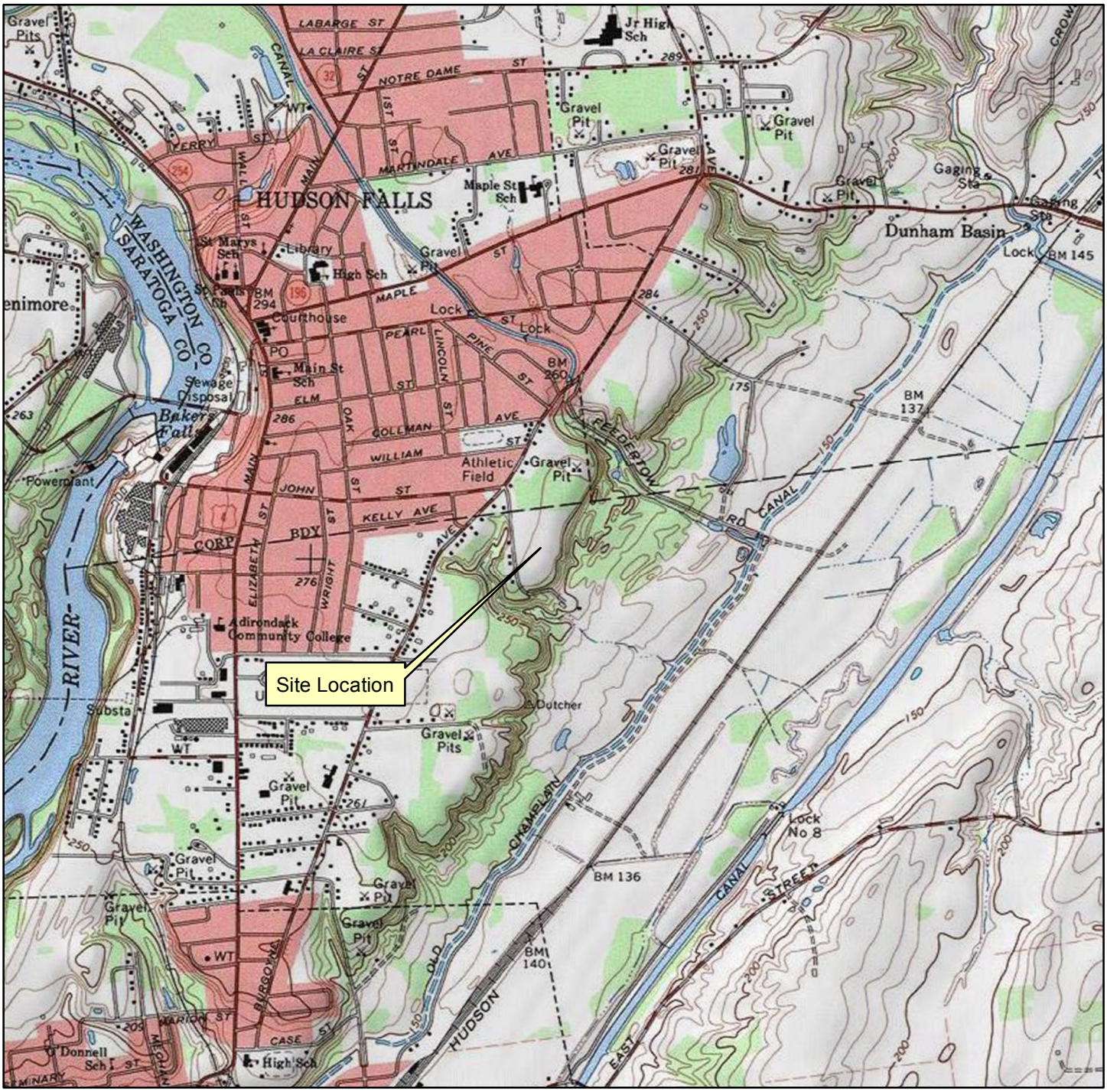
3. Prevent the discharge of contaminants to surface water:

   Due to the capacity of the existing treatment facility building, all three of the groundwater recovery wells are not currently operational. The capture of the groundwater is required to prevent groundwater from impacting the feeder canal system. The elevated levels of iron above the AWQS in the effluent of the groundwater treatment system indicates that the site remedy, in its current configuration, is not protecting the Fort Edward Feeder Canal. These issues are categorized as moderate, as it has the potential for human exposure to impacted surface water.

5.2 Recommendations

The following recommendations are made for the Fort Edward Landfill Site:

- The proposed 60 gpm Clarifier should be installed and the third groundwater recovery well should be brought back online.
- Repairs of MW-5 and UI-MW-3 should be made.
- The Remedial System Optimization should be performed.
- Surface water should be sampled as part of the RSO to confirm the efficiency of the individual treatment units.
- Clean-outs should be installed at the influent to each of the CWTS cells in order to facilitate cleaning of the lines
- Trees in the vicinity of the drainage swales should be removed to promote drainage away from the landfill cap.
- The influent lines should be cleaned, after the tree/shrub removal of the drainage swales.
- Soil vapor vents at the landfill need to be serviced.



USGS Quadrangle Information
Quad ID: 43073-C5
Name: Hudson Falls, New York
Date Pub: 1968

Figure 1
Site Location
Fort Edward Landfill
Leavy Hollow Road
Fort Edward, New York
HRP# NEW9622.OM
Scale 1" = 2,000'

HRP Associates, Inc.
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Path: J:\NNEWEN - NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION\FORT EDWARD LANDFILL, LEAVY HOLLOW ROAD, FORT EDWARD, NY\NEW9622OM\GIS\Site Location.mxd

N

BURGOYNE AVENUE

HUDSON FALLS

KINGSBURY

KINGSBURY LANDFILL

TOWN OF KINGSBURY

TOWN OF FORT EDWARD

GLENS FALLS FEEDER CANAL

(187.36)
MW-07

(183.25)
MW-06A

MW-06B (177.74)

MW-06C (185.09)

VILLAGE OF HUDSON FALLS

TOWN OF FORT EDWARD

MW-05

MW-08
(232.66)

228

218

208

198

188

LEAVY HOLLOW ROAD

MW-01D

MW-01
(223.32)

MW-01A
(219.16)

MW-02 (184.91)

MW-02A (183.68)

NEW MONITORING WELL

260 250 240 230 220 210 200 190 180 170 160 150

FIGURE 2
SITE PLAN
FORT EDWARD LANDFILL
LEAVY HOLLOW ROAD
FORT EDWARD, NEW YORK
HRP# NEW9622.OM
SCALE: 1" = 250'

1" = 250'

250 0 125 250 500

APPROXIMATE SCALE IN FEET

HRP Associates, Inc.
Environmental/Civil Engineering & Hydrogeology
Creating the Right Solutions Together
Offices in CT, SC, NY, FL, MA and TX
197 Scott Swamp Road
Farmington, Connecticut 06032
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J:\NY\NEWEN - NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION\FORT EDWARD LANDFILL, LEAVY HOLLOW ROAD, FORT EDWARD, NY\NEW9622OM\CAD\SITE PLAN.dwg, Layout1, 2/17/2012 12:26:09 PM

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Farmington, CT 06032

FIGURE 3
TOTAL VOCs in GROUNDWATER
Fort Edward Landfill
Town of Fort Edward, New York
Site No. 5-58-001

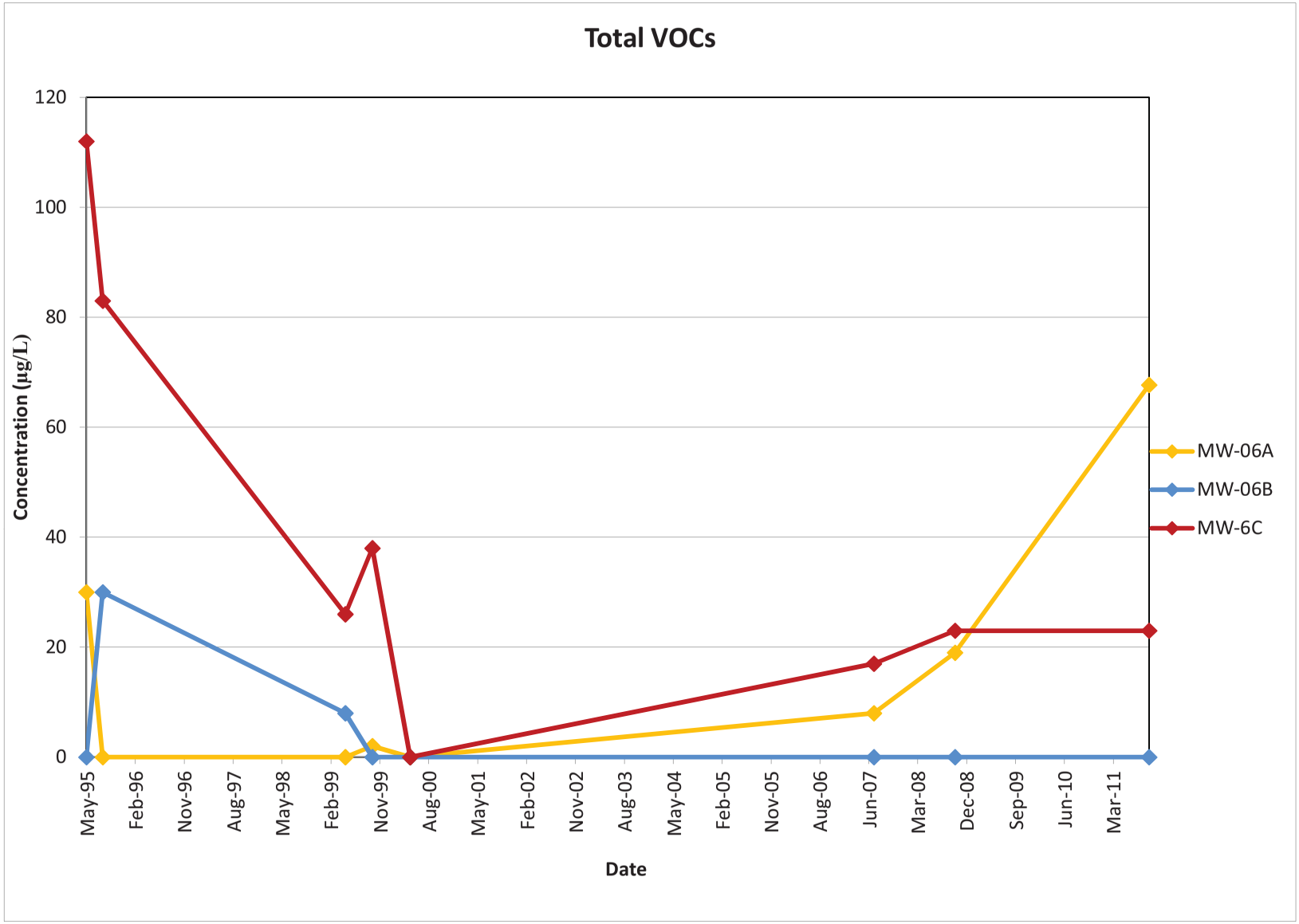

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FIGURE 4
SELECTED METALS DATA in GROUNDWATER
Fort Edward Landfill
Town of Fort Edward, NY
Site No. 5-58-001

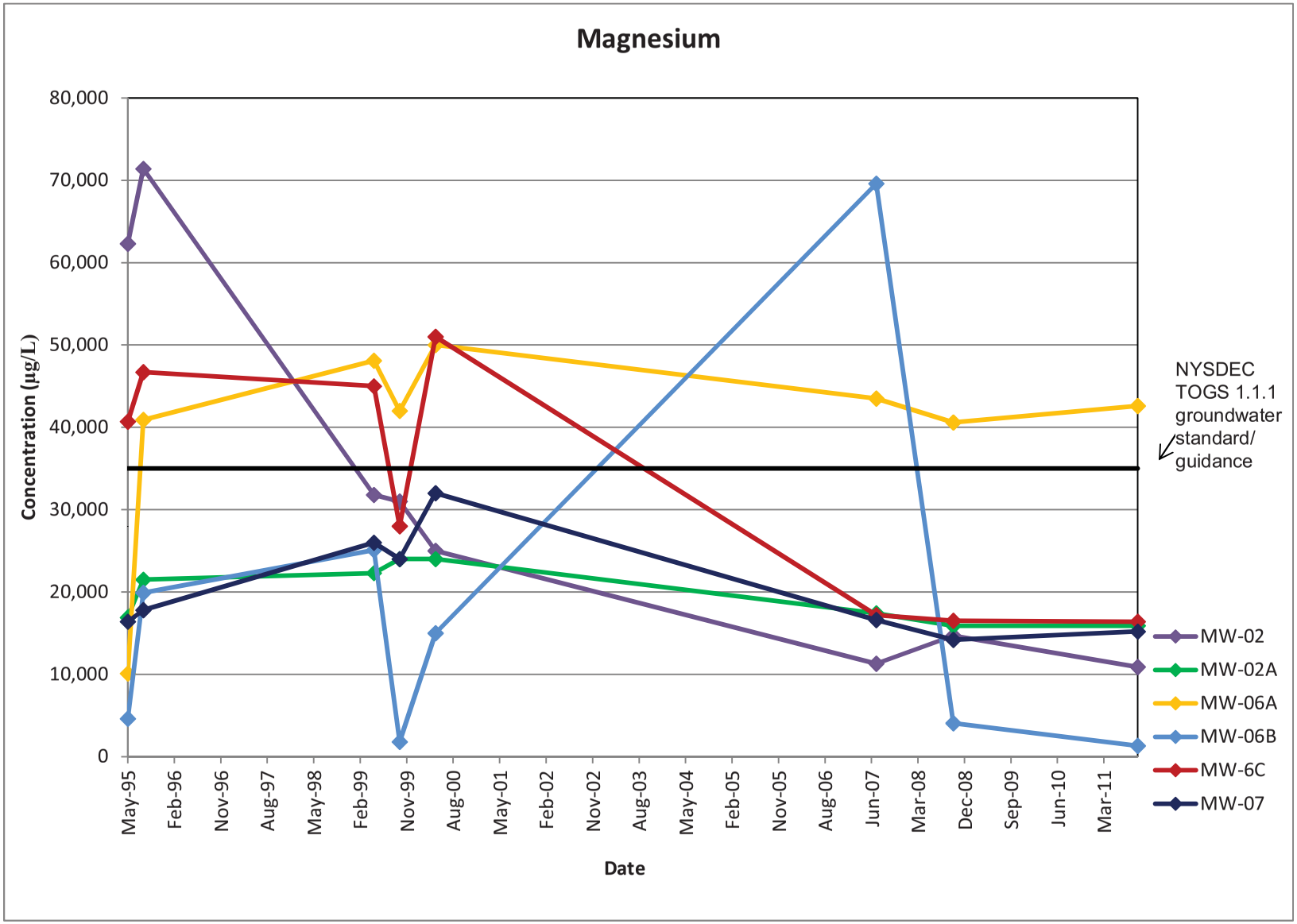

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FIGURE 5
SELECTED METALS DATA in GROUNDWATER
Fort Edward Landfill
Town of Fort Edward, NY
Site No. 5-58-001

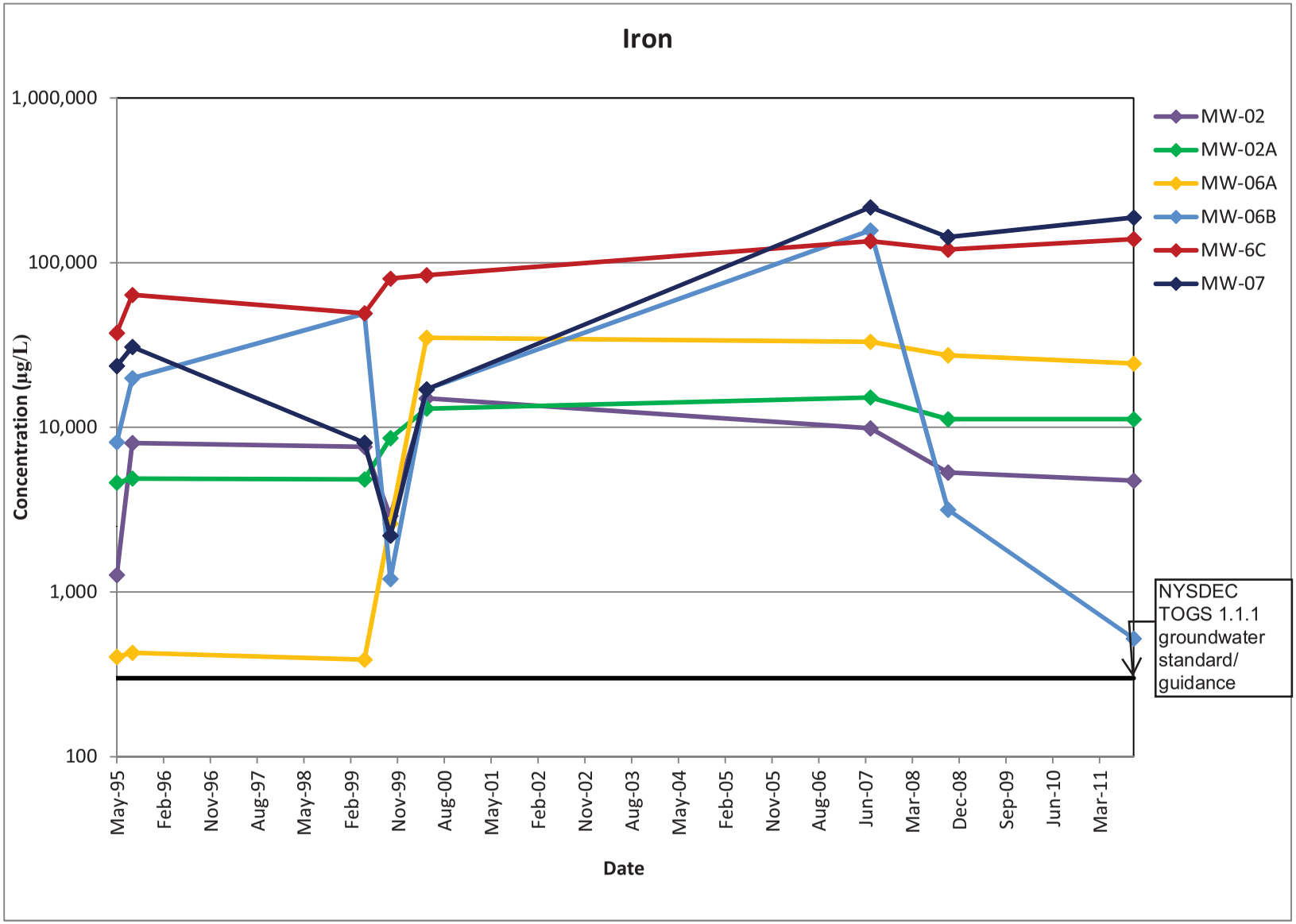

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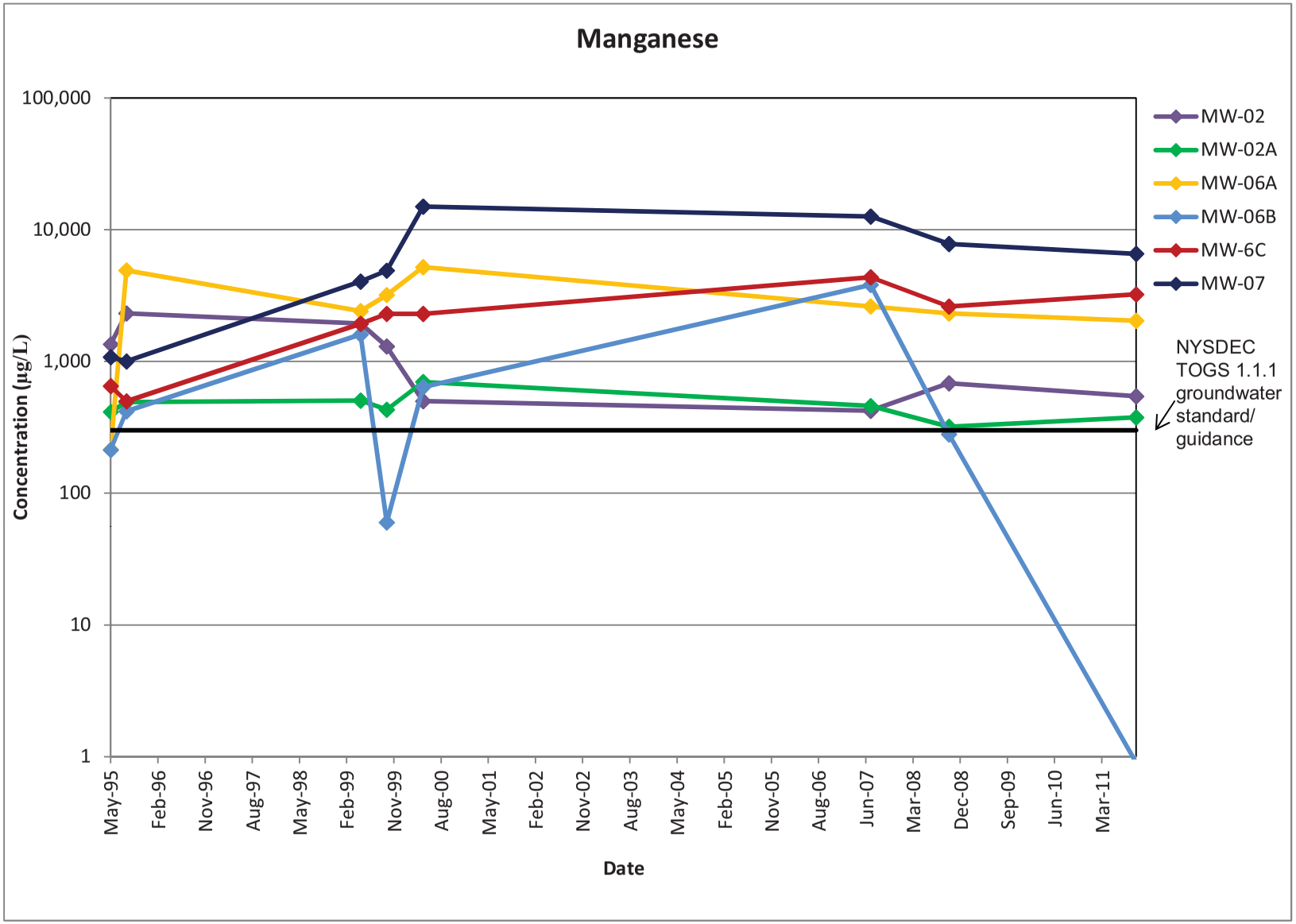
FIGURE 6
SELECTED METALS DATA in GROUNDWATER
Fort Edward Landfill
Town of Fort Edward, NY
Site No. 5-58-001



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Farmington, CT 06032

FIGURE 7
SELECTED METALS DATA in GROUNDWATER
Fort Edward Landfill
Town of Fort Edward, NY
Site No. 5-58-001

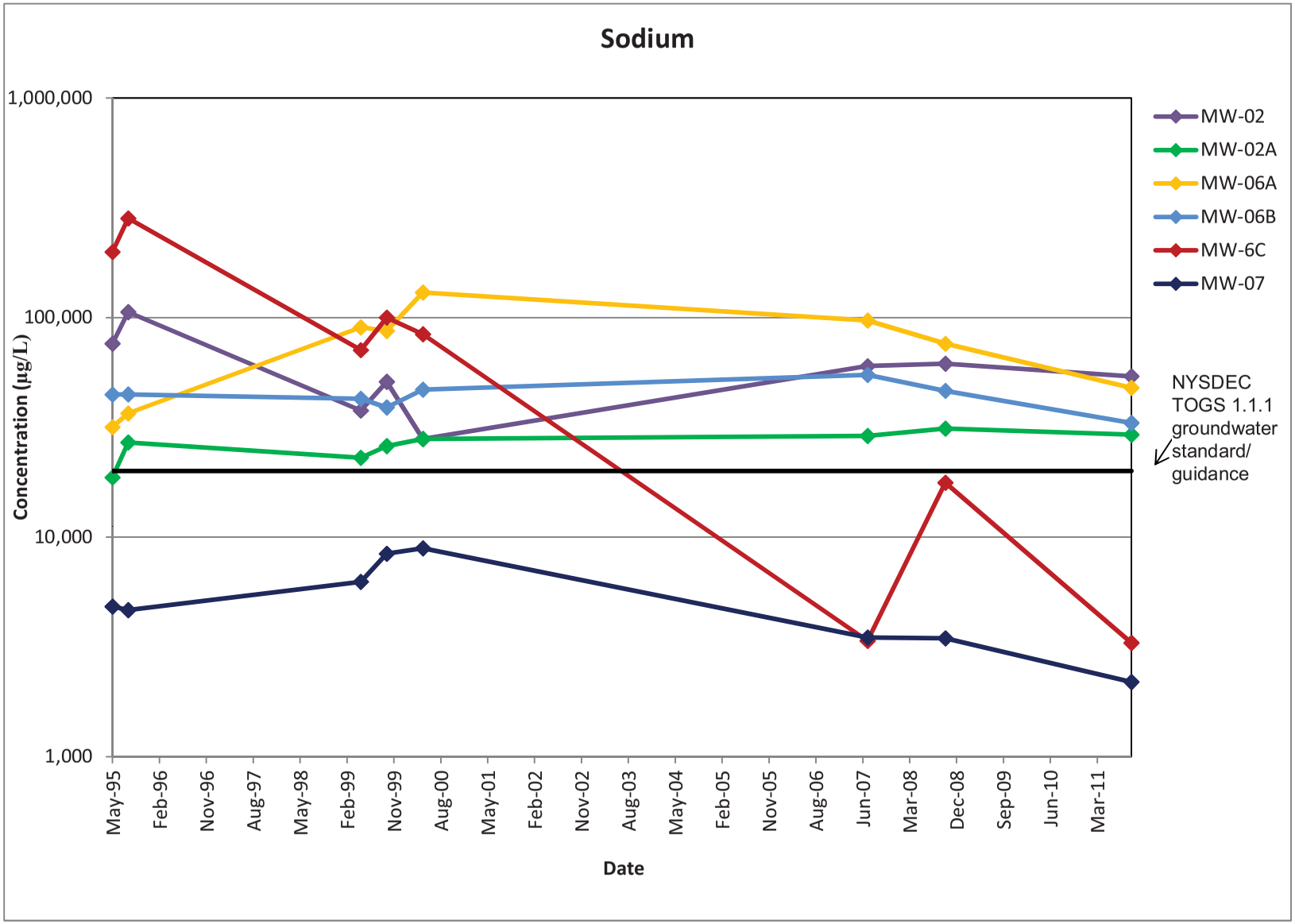

Table 1: Summary of Analytical Results

Fort Edward Landfill
Fort Edward, New York
Site #558001

	CAS	7440-38-2	7440-39-3	7440-43-9	7440-47-3	7440-48-4	7440-50-8	7439-89-6	7439-92-1	7439-97-6	7440-02-0	7440-62-2	7440-66-6	TSS	TDS	11141-16-5	11096-82-5	11097-69-1	11104-28-2	12674-11-2	53469-21-9	12672-29-6	75-34-3	71-43-2	75-27-4	108-90-7	75-00-3	67-66-3	100-41-4	1330-20-7	75-09-2	64743-03-9	108-88-3	156-59-2	156-60-5	75-01-4
	Unit	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l
	NYSDEC Class GA Criteria	0.025	1	0.005	0.05	NS	0.2	0.3	0.025	0.0007	0.1	NS	2			0.09	0.09	0.09	0.09	0.09	0.09	0.09	5	1	50	5	50	7	5	5	5		5	5	5	2
	SW Discharge Limit	0.15	Monitor	0.001	0.21	0.005	0.024	0.3	0.0032	0.0008	0.0096	0.014	0.17	50	500	0.065	0.065	0.065	0.065	0.065	0.065	0.065	30	10	30	10	20	150	10	10	50	Monitor	10	30	30	50

Well ID	AOC	Turbidity	SCREEN DEPTH	Sampling Event	Sampling Event	Lab Report No.:	Lab Sample No.:	Depth to water (feet)	Depth to Bottom (feet)	Arsenic	Barium	Cadmium	Chromium, Total	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Vanadium	Zinc	TSS	Total Dissolved Solids	PCB-1232	PCB-1260	PCB-1254	PCB-1221	PCB-1016	PCB-1242	PCB-1248	1,1-Dichloroethane	Benzene	Bromodichloromethane	Chlorobenzene	Chloroethane	Chloroform	Ethylbenzene	m-,p-,o-Xylene	Methylene chloride	Phenols	Toluene	cis-1,2-Dichloroethylene	trans-1,2-Dichloroethylene	Vinyl chloride
Cell 1				06/22/11	110622087	110622087-002A			<0.005	0.232	<0.001	<0.005	<0.005	<0.005	**26.7**	<0.003	<0.0002	<0.009	<0.010	**0.319**	**955**	375	(<0.081)	(<0.081)	(<0.081)	(<0.081)	(<0.081)	(<0.081)	(<0.081)	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 2				06/22/11	110622087	110622087-003A			<0.005	0.101	<0.001	<0.005	<0.005	<0.005	**8.05**	<0.003	<0.0002	<0.009	<0.010	0.066	**80**	395	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 3				06/22/11	110622087	110622087-004A			<0.005	0.07	<0.001	<0.005	<0.005	<0.005	**25.5**	<0.003	<0.0002	<0.009	<0.010	<0.010	15	475	<0.065	<0.065	<0.065	**0.108**	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Effluent				06/22/11	110622087	110622087-001A			<0.005	0.031	<0.001	<0.005	<0.005	<0.005	**0.891**	<0.003	<0.0002	<0.009	<0.010	<0.010	4	300	NA	NA	NA	NA	NA	NA	NA	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Influent				06/22/11	110622087	110622087-005A			<0.005	0.054	<0.001	<0.005	<0.005	<0.005	**18.9**	<0.003	<0.0002	<0.009	<0.010	<0.010	29	365	NA	NA	NA	NA	NA	NA	NA	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	NA	<5.0	<5.0	<5.0	(<10)
UI-MW-4				06/29/11	110705004	110705004-005C			<0.005	0.087	(<0.005)	<0.005	(<0.05)	<0.005	**20.6**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	<0.065	<0.065	<0.065	**0.113**	<0.065	<0.065	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	**6.9**	<5	<5	(<10)
New-MW				06/30/11	110705004	110705004-006C			<0.005	0.173	(<0.005)	0.038	(<0.05)	**0.026**	**23.9**	(<0.005)	<0.0002	**0.022**	**0.048**	0.078	NA	NA	(<0.07)	(<0.07)	(<0.07)	(<0.07)	(<0.07)	(<0.07)	(<0.07)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
FD-1				07/01/11	110705004	110705004-013C			<0.005	0.023	(<0.005)	<0.005	(<0.05)	<0.005	**191**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
Trip Blank [Lot #255]				07/01/11	110705004	110705004-014A			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
CTC-11				07/05/11	110706065	110706065-003C			0.005	0.053	(<0.005)	<0.005	(<0.05)	<0.005	**11.7**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
FD-2				07/05/11	110706065	110706065-015C			0.006	0.044	(<0.005)	<0.005	(<0.05)	<0.005	**11.8**	(<0.005)	<0.0002	(<0.02)	(<0.02)	0.069	NA	NA	(<1.3)	(<1.3)	(<1.3)	**20**	(<1.3)	**13.8**	(<1.3)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
PP-Eff-12				07/05/11	110706065	110706065-004C			<0.005	0.13	(<0.005)	0.018	(<0.05)	0.01	**15.6**	(<0.005)	<0.0002	(<0.02)	**0.042**	0.088	NA	NA	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
Recovery Trench - 5				07/05/11	110706065	110706065-008C			<0.005	0.067	(<0.005)	<0.005	(<0.05)	<0.005	**14**	(<0.005)	<0.0002	(<0.02)	(<0.02)	0.023	NA	NA	(<0.067)	(<0.067)	(<0.067)	(<0.067)	(<0.067)	(<0.067)	(<0.067)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	**5.9**	<5	<5	(<10)
Runoff - 15				07/05/11	110706065	110706065-009C			<0.005	0.309	(<0.005)	0.03	(<0.05)	0.016	**95.2**	**0.013**	<0.0002	(<0.02)	**0.059**	0.123	NA	NA	(<0.072)	(<0.072)	(<0.072)	(<0.072)	(<0.072)	(<0.072)	(<0.072)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
Runoff-13				07/05/11	110706065	110706065-005C			<0.005	0.02	(<0.005)	<0.005	(<0.05)	<0.005	**4.46**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	(<0.072)	(<0.072)	(<0.072)	(<0.072)	(<0.072)	(<0.072)	(<0.072)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
Runoff-14				07/05/11	110706065	110706065-014C			<0.005	0.036	(<0.005)	<0.005	(<0.05)	<0.005	**2.4**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	(<0.066)	(<0.066)	(<0.066)	**0.226**	(<0.066)	**0.073**	(<0.066)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
RW - #1				07/05/11	110706065	110706065-011C			<0.005	0.203	(<0.005)	0.006	(<0.05)	<0.005	**48.5**	(<0.005)	<0.0002	(<0.02)	(<0.02)	0.011	NA	NA	(<39)	(<39)	(<39)	**1130**	(<39)	**694**	(<39)	(<10)	(<10)	<10	(<10)	<20	(<10)	(<10)	**33**	(<10)	NA	**42**	**94**	(<10)	**260**
RW - #2				07/05/11	110706065	110706065-012C			0.019	0.128	(<0.005)	<0.005	(<0.05)	0.012	**24.5**	(<0.005)	<0.0002	(<0.02)	(<0.02)	0.059	NA	NA	<0.065	<0.065	<0.065	<0.065	<0.065	**0.156**	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	**7.2**	<5	(<10)
RW - #3				07/05/11	110706065	110706065-013C			<0.005	0.614	(<0.005)	0.009	(<0.05)	<0.005	**123**	(<0.005)	<0.0002	(<0.02)	**0.024**	**1.21**	NA	NA	(<0.081)	(<0.081)	(<0.081)	**1.48**	(<0.081)	**0.12**	(<0.081)	<5	**7.2**	<5	<5	**44**	<10	<5	<5	<5	NA	<5	<5	<5	(<10)
RW - #3 (Dup)				07/05/11	110706065	110706065-013C (Dup)			NA	NA	NA	NA	NA	NA	NA	NA	NA	(<0.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RW - #4				07/05/11	110706065	110706065-010C			<0.005	0.323	(<0.005)	0.01	(<0.05)	<0.005	**377**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	(<0.13)	(<0.13)	(<0.13)	**2.64**	(<0.13)	**0.694**	(<0.13)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
System Effluent				07/05/11	110706065	110706065-007C			<0.005	0.047	(<0.005)	<0.005	(<0.05)	0.017	**17.2**	(<0.005)	<0.0002	(<0.02)	(<0.02)	0.074	NA	NA	<0.065	<0.065	<0.065	**1.68**	<0.065	**0.373**	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
System Influent				07/05/11	110706065	110706065-006C			<0.005	0.054	(<0.005)	<0.005	(<0.05)	<0.005	**28.2**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	<0.065	<0.065	<0.065	**1.73**	<0.065	**0.431**	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
TC #1				07/05/11	110706065	110706065-001C			0.006	0.059	(<0.005)	<0.005	(<0.05)	<0.005	**19.4**	(<0.005)	<0.0002	(<0.02)	(<0.02)	**0.188**	NA	NA	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
TC #2				07/05/11	110706065	110706065-002C			0.007	0.051	(<0.005)	<0.005	(<0.05)	<0.005	**11.8**	(<0.005)	<0.0002	(<0.02)	(<0.02)	<0.01	NA	NA	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
TC #3				07/05/11	110706065	110706065-016C			**0.045**	0.999	(<0.005)	0.016	(<0.05)	<0.005	**447**	**0.025**	<0.0002	(<0.02)	**0.08**	**3.21**	NA	NA	(<0.081)	(<0.081)	(<0.081)	(<0.081)	(<0.081)	(<0.081)	(<0.081)	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
Trip Blank Lot #255				07/05/11	110706065	110706065-017A			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<5	(<5)	<5	<5	<10	<5	<5	<5	<5	NA	<5	<5	<5	(<10)
Cell 1				07/20/11	110720067	110720067-002A			**0.073**	**1.11**	<0.001	0.03	<0.005	<0.005	**482**	**0.037**	<0.0002	<0.009	**0.121**	**1.96**	**795**	485	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**11**	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 2				07/20/11	110720067	110720067-003A			<0.005	0.05	<0.001	<0.005	<0.005	<0.005	**12.3**	<0.003	<0.0002	<0.009	<0.010	<0.010	**142**	490	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**11**	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 3				07/20/11	110720067	110720067-004A			<0.005	0.041	<0.001	<0.005	<0.005	<0.005	**7.02**	<0.003	<0.0002	<0.009	<0.010	0.074	7	415	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**11**	<0.002	<5.0	<5.0	<5.0	(<10)
Effluent				07/20/11	110720067	110720067-005A			<0.005	0.028	<0.001	<0.005	<0.005	<0.005	**1.02**	<0.003	<0.0002	<0.009	<0.010	<0.010	9	290	NA	NA	NA	NA	NA	NA	NA	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**11**	0.003	<5.0	<5.0	<5.0	(<10)
Influent				07/20/11	110720067	110720067-001B			<0.005	0.058	<0.001	<0.005	<0.005	<0.005	**33.7**	**0.004**	<0.0002	<0.009	<0.010	<0.010	**64**	**575**	NA	NA	NA	NA	NA	NA	NA	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	**12**	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 1				09/14/11	110914058	110914058-002ASITE			<0.005	0.47	<0.001	<0.005	<0.005	<0.005	**32.6**	**0.004**	<0.0002	<0.009	**0.052**	**0.556**	**1230**	390	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 2				09/14/11	110914058	110914058-003ASITE			<0.005	0.061	<0.001	<0.005	<0.005	<0.005	**6.86**	<0.003	<0.0002	<0.009	**0.055**	0.017	28	395	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Cell 3				09/14/11	110914058	110914058-004ASITE			<0.005	0.059	<0.001	<0.005	<0.005	<0.005	**6.18**	<0.003	<0.0002	<0.009	**0.056**	0.023	10	435	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Effluent				09/14/11	110914058	110914058-001BSITE			<0.005	0.038	<0.001	<0.005	<0.005	<0.005	**1.88**	<0.003	<0.0002	<0.009	**0.033**	0.019	2.5	255	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)
Influent				09/14/11	110914058	110914058-005ASITE			<0.005	0.065	<0.001	<0.005	<0.005	<0.005	**19.8**	<0.003	<0.0002	<0.009	**0.066**	<0.010	NA	NA	<0.065	<0.065	<0.065	**1.17**	<0.065	**0.402**	<0.065	<5.0	(<5)	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<0.002	<5.0	<5.0	<5.0	(<10)

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

Table 2
Groundwater Analytical Data

Ft Edward Landfill
Town of Fort Edward, New York
Site No. 5-58-001
June 2011

				Lab Report No:	110705004	110705004	110705004	110705004	110705004	110705004	110705004
				Lab Sample No:	110705004-002C	110705004-003C	110705004-001C	110705004-007C	110705004-008C	110705004-004C	110705004-011C
					MW-01	**MW-01A**	**MW-01D**	**MW-02**	**MW-02A**	**MW-08**	**MW-6A**
Date Collected					**6/29/2011**	**6/29/2011**	**6/29/2011**	**6/30/2011**	**6/30/2011**	**6/29/2011**	**7/1/2011**
WATER-Metals			**NYSDEC Class GA Criteria**								
Aluminum, Total	7429-90-5	mg/l	0.1		<0.1	**0.146**	<0.1	<0.1	<0.1	<0.1	<0.1
Antimony	7440-36-0	mg/l	0.003		(<0.06)	(<0.06)	(<0.06)	(<0.06)	(<0.06)	(<0.06)	(<0.06)
Arsenic	7440-38-2	mg/l	0.025		<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	7440-39-3	mg/l	1		0.016	<0.01	0.473	0.022	0.067	0.02	0.152
Beryllium	7440-41-7	mg/l	0.003		(<0.005)	(<0.005)	(<0.005)	(<0.005)	(<0.005)	(<0.005)	(<0.005)
Calcium	7440-70-2	mg/l	NS		35	14.6	8.68	71.9	46.5	70	112
Chromium, Total	7440-47-3	mg/l	0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	7440-50-8	mg/l	0.2		0.006	<0.005	<0.005	0.008	<0.005	<0.005	<0.005
Iron	7439-89-6	mg/l	0.3		<0.05	**0.352**	**1.14**	**4.74**	**11.2**	<0.05	**24.4**
Magnesium	7439-95-4	mg/l	35		7.16	1	4.16	10.9	15.9	12.5	**42.6**
Manganese	7439-96-5	mg/l	0.3		<0.02	0.022	<0.02	**0.544**	**0.376**	0.022	**2.04**
Nickel	7440-02-0	mg/l	0.1		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Potassium, Total	7440-09-7	mg/l	NS		0.96	0.663	3.54	3.5	1.65	0.878	11.1
Sodium, Total	7440-23-5	mg/l	20		**33.1**	19.2	**31.4**	**54**	**29.3**	12.4	**47.9**
Thallium	7440-28-0	mg/l	0.0005		(<0.01)	(<0.01)	(<0.01)	**0.012**	(<0.01)	(<0.01)	**0.017**
Vanadium	7440-62-2	mg/l	NS		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc	7440-66-6	mg/l	2		<0.01	0.019	0.066	<0.01	<0.01	<0.01	<0.01
WATER-8260B			**NYSDEC Class GA Criteria**		110705004/110705004-002B	110705004/110705004-003B	110705004/110705004-001B	110705004/110705004-007B	110705004/110705004-008B	110705004/110705004-004B	110705004/110705004-011B
1,1,2-Trichloroethane	79-00-5	ug/l	1		(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
1,1,2-Trichlorotrifluoroethane (freon 113)	76-13-1	ug/l	5		(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
1,2,4-Trichlorobenzene	120-82-1	ug/l	5		<5	<5	<5	<5	<5	<5	**37**
1,2-Dibromo-3-chloropropane	96-12-8	ug/l	0.04		(<50)	(<50)	(<50)	(<50)	(<50)	(<50)	(<50)
1,2-Dichlorobenzene	95-50-1	ug/l	3		(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
1,2-Dichloropropane	78-87-5	ug/l	1		(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
1,3-Dichlorobenzene	541-73-1	ug/l	5		<5	<5	<5	<5	<5	<5	**18**
1,4-Dichlorobenzene	106-46-7	ug/l	5		<5	<5	<5	<5	<5	<5	**6**
Benzene	71-43-2	ug/l	1		(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
Bromomethane	74-83-9	ug/l	5		(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
Chlorobenzene	108-90-7	ug/l	5		<5	<5	<5	<5	<5	<5	**6.7**
Dichlorodifluoromethane	75-71-8	ug/l	5		(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
Methylene chloride	75-09-2	ug/l	5		<5	<5	<5	**6.7**	<5	<5	<5
Toluene	108-88-3	ug/l	5		<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	ug/l	2		(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
1,3-Dichloropropene (Total)		ug/l	0.4		(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
WATER-Misc			**NYSDEC Class GA Criteria**		110705004/110705004-002A	110705004/110705004-003A	110705004/110705004-001A	110705004/110705004-007A	110705004/110705004-008A	110705004/110705004-004A	110705004/110705004-011A
PCB-1016	12674-11-2	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCB-1221	11104-28-2	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCB-1232	11141-16-5	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCB-1242	53469-21-9	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCB-1248	12672-29-6	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCB-1254	11097-69-1	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCB-1260	11096-82-5	ug/l			<0.065	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PCBs-Total		ug/l	0.09		(<0.455)	(<0.455)	(<0.455)	(<0.455)	(<0.455)	(<0.455)	(<0.455)

Key

1	Parameter Detected Below Standards
1	Parameter Exceeds ANY standards
NA	Parameter Not Analyzed

Notes:

Shaded Cells indicate exceedances of one or more of the listed standards.
The Lab Sample No. is the merging of the Lab Sample ID and the Lab Sample Type.
NA = Not Submitted for analysis
NE = None Established
( ) = Indicates the stated minimum detectable level exceeds a criteria.
Chromium DEC standards as shown are for Hexavalent Chromium.

HRP Associates, Inc.
197 Scott Swamp Road
Farmington, CT 06032

Table 2
Groundwater Analytical Data

Ft Edward Landfill
Town of Fort Edward, New York
Site No. 5-58-001
June 2011

			Lab Report No:	110705004	110705004	110705004	110705004	110705004	110705004	110705004
			Lab Sample No:	110705004-010C	110705004-012C	110705004-009C	110705004-013C	110705004-006C	110705004-014A	110705004-005C
				MW-6B	**MW-6C**	**MW-7**	**FD-1**	**New-MW**	**Trip Blank [Lot #255]**	**UI-MW-4**
							(Duplicate of MW-7)			
Date Collected				**7/1/2011**	**7/1/2011**	**7/1/2011**	**7/1/2011**	**6/30/2011**	**7/1/2011**	**6/29/2011**
WATER-Metals			**NYSDEC Class GA Criteria**							
Aluminum, Total	7429-90-5	mg/l	0.1	**0.123**	<0.1	<0.1	<0.1	**16.6**	NA	<0.1
Antimony	7440-36-0	mg/l	0.003	(<0.06)	(<0.06)	(<0.06)	(<0.06)	(<0.06)	NA	(<0.06)
Arsenic	7440-38-2	mg/l	0.025	<0.005	<0.005	<0.005	<0.005	<0.005	NA	<0.005
Barium	7440-39-3	mg/l	1	<0.01	0.031	0.024	0.023	0.173	NA	0.087
Beryllium	7440-41-7	mg/l	0.003	(<0.005)	(<0.005)	(<0.005)	(<0.005)	(<0.005)	NA	(<0.005)
Calcium	7440-70-2	mg/l	NS	8.61	78.9	71.7	68.7	72.3	NA	146
Chromium, Total	7440-47-3	mg/l	0.05	<0.005	<0.005	<0.005	<0.005	0.038	NA	<0.005
Copper	7440-50-8	mg/l	0.2	0.005	<0.005	<0.005	<0.005	0.026	NA	<0.005
Iron	7439-89-6	mg/l	0.3	**0.521**	**139**	**188**	**191**	**23.9**	NA	**20.6**
Magnesium	7439-95-4	mg/l	35	1.32	16.4	15.2	14.4	**156**	NA	**35.5**
Manganese	7439-96-5	mg/l	0.3	<0.02	**3.23**	**6.57**	**6.3**	0.219	NA	**1.12**
Nickel	7440-02-0	mg/l	0.1	<0.02	<0.02	<0.02	<0.02	0.022	NA	<0.02
Potassium, Total	7440-09-7	mg/l	NS	0.869	4.59	1.61	1.53	4.93	NA	4.4
Sodium, Total	7440-23-5	mg/l	20	**33.1**	3.3	2.19	2.07	**174**	NA	13.3
Thallium	7440-28-0	mg/l	0.0005	(<0.01)	(<0.01)	**0.018**	**0.035**	**0.048**	NA	**0.015**
Vanadium	7440-62-2	mg/l	NS	<0.02	<0.02	<0.02	<0.02	0.048	NA	<0.02
Zinc	7440-66-6	mg/l	2	0.057	<0.01	<0.01	<0.01	0.078	NA	<0.01
WATER-8260B			**NYSDEC Class GA Criteria**	110705004/110705004-010B	110705004/110705004-012B	110705004/110705004-009B	110705004/110705004-013B	110705004/110705004-006B		110705004/110705004-005B
1,1,2-Trichloroethane	79-00-5	ug/l	1	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
1,1,2-Trichlorotrifluoroethane (freon 113)	76-13-1	ug/l	5	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
1,2,4-Trichlorobenzene	120-82-1	ug/l	5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-chloropropane	96-12-8	ug/l	0.04	(<50)	(<50)	(<50)	(<50)	(<50)	(<50)	(<50)
1,2-Dichlorobenzene	95-50-1	ug/l	3	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
1,2-Dichloropropane	78-87-5	ug/l	1	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
1,3-Dichlorobenzene	541-73-1	ug/l	5	<5	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	106-46-7	ug/l	5	<5	<5	<5	<5	<5	<5	<5
Benzene	71-43-2	ug/l	1	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)	(<5)
Bromomethane	74-83-9	ug/l	5	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
Chlorobenzene	108-90-7	ug/l	5	<5	**23**	<5	<5	<5	<5	<5
Dichlorodifluoromethane	75-71-8	ug/l	5	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
Methylene chloride	75-09-2	ug/l	5	<5	<5	<5	<5	<5	<5	<5
Toluene	108-88-3	ug/l	5	<5	<5	<5	<5	<5	<5	**6.9**
Vinyl chloride	75-01-4	ug/l	2	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
1,3-Dichloropropene (Total)		ug/l	0.4	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)	(<10)
WATER-Misc			**NYSDEC Class GA Criteria**	110705004/110705004-010A	110705004/110705004-012A	110705004/110705004-009A	110705004/110705004-013A	110705004/110705004-006A		110705004/110705004-005A
PCB-1016	12674-11-2	ug/l		<0.066	<0.065	<0.065	<0.065	<0.07	NA	<0.065
PCB-1221	11104-28-2	ug/l		<0.066	0.18	<0.065	<0.065	<0.07	NA	0.113
PCB-1232	11141-16-5	ug/l		<0.066	<0.065	<0.065	<0.065	<0.07	NA	<0.065
PCB-1242	53469-21-9	ug/l		<0.066	<0.065	<0.065	<0.065	<0.07	NA	<0.065
PCB-1248	12672-29-6	ug/l		<0.066	<0.065	<0.065	<0.065	<0.07	NA	<0.065
PCB-1254	11097-69-1	ug/l		<0.066	<0.065	<0.065	<0.065	<0.07	NA	<0.065
PCB-1260	11096-82-5	ug/l		<0.066	<0.065	<0.065	<0.065	<0.07	NA	<0.065
PCBs-Total		ug/l	0.09	(<0.462)	**0.18**	(<0.455)	(<0.455)	(<0.49)	NA	**0.113**

Key

1	Parameter Detected Below Standards
1	Parameter Exceeds ANY standards
NA	Parameter Not Analyzed

Notes:

Shaded Cells indicate exceedances of one or more of the listed standards.
The Lab Sample No. is the merging of the Lab Sample ID and the Lab Sample Type.
NA = Not Submitted for analysis
NE = None Established
( ) = Indicates the stated minimum detectable level exceeds a criteria.
Chromium DEC standards as shown are for Hexavalent Chromium.

Appendix

EC/IC Certification Form

Enclosure 1
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. 558001

Site Name Fort Edward Landfill

Site Address: Burgoyne Avenue Zip Code: 12828

City/Town: Fort Edward

County: Washington

Allowable Use(s) (if applicable, does not address local zoning): Industrial

Site Acreage: 23.0

Verification of Site Details **Box 2**

		YES	NO
1.	Are the Site Details above, correct?	☒	☐
	If NO, are changes handwritten above or included on a separate sheet?	☐	
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☒
	If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	☒
	If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification?	☐	
4.	If use of the site is restricted, is the current use of the site consistent with those restrictions?	☒	☐
	If NO, is an explanation included with this certification?	☐	
5.	For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☒
	If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6.	For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☐	☐
	If NO, are changes in the assessment included with this certification?	☐	

SITE NO. 558001 **Box 3**

Description of Institutional Controls

Parcel	Institutional Control
S_B_L Image: **163.-1-2**	Decision Document Ground Water Use Restriction Landuse Restriction Soil Management Plan Surface Water Use Restriction

Box 4

Description of Engineering Controls

Parcel	Engineering Control
S_B_L Image: **163.-1-2**	Cover System Fencing/Access Control Groundwater Containment Leachate Collection Point-of-Entry Water Treatment Pump & Treat Subsurface Barriers

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (See instructions)

Control Description for Site No. 558001

Parcel: 163.-1-2

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☐	☒

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

   I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

YES	NO
☒	☐

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

   I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES	NO
☒	☐

IC CERTIFICATIONS
SITE NO. 558001

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner or Remedial Party Rendering Certification Date

IC/EC CERTIFICATIONS

Box 7

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Nancy Garry, HRP at 1 Fairchild Square, Suite 110, Clifton Park NY, 12065
print name / Engineering, P.C. print business address

am certifying as a Qualified Environmental Professional for the NYSDEC

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

STATE OF NEW YORK
NANCY E. GARRY
LICENSED PROFESSIONAL ENGINEER
062523

Nancy Garry 6/20/12
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification Stamp (if Required) Date