ON-SITE TECHNICAL SERVICES, INC

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May 13, 2013

David Szymanski
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Wellsville/Andover Landfill Site (Site # 9-02-004) – 2012 Annual Site Report

Dear David:

On behalf of the Village of Wellsville the purpose of this letter is to submit the 2012 Annual Periodic Review Report for the Wellsville/Andover Landfill located in Allegany County, New York. Please note the PRR certification is included as Appendix A, and an electronic copy of the annual report is enclosed as Appendix E.

If you have any questions or require any clarification of the enclosed data, please feel free to call (585) 593-1824.

Sincerely,

Jonathan Brandes, P.G.
Senior Geologist

Attachments

Cc: Bill Whitfield, Village of Wellsville

Prepared for:

Village of Wellsville

Department of Public Works

200 Bolivar Road

Wellsville, NY 14895

PERIODIC REVIEW REPORT (2012 ANNUAL)

Wellsville/Andover Landfill Site
Operations and Maintenance
Site Number 9-02-004
Allegany County, New York

Prepared by:

On-Site Technical Services, Inc.

72 Railroad Avenue

Wellsville, NY 14895

May 2013

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1.0 OVERVIEW

1.1 Introduction

This report presents the 2012 operations and maintenance activities associated with the Wellsville/Andover Landfill Site (Site) located in Wellsville and Andover townships, Allegany County, New York (Figure 1) and has been prepared by On-Site Technical Services, Inc., (On-Site) of Wellsville, New York. This report summarizes operation and maintenance activities performed from January 1 to December 31, 2012. Operation and maintenance requirements for this project are detailed in the *Operation and Maintenance Manual for the Wellsville/Andover Landfill Site Number 9-02-004 Allegany County, New York,* dated November 1997 (O&M Plan), prepared by Ecology and Environment Engineering, P.C. (E&E) with subsequent revisions. Revisions to the O&M Plan have been approved by the New York State Department of Environmental Conservation (NYSDEC) and the current O&M requirements are outlined in Section 2 of this report (here after referred to as Approved O&M Plan) with details included in Appendix B. Other reports pertaining to 2012 operation and maintenance of the Site include:

- *Spring 2012 Monitoring Event Summary Wellsville/Andover Landfill Site,* dated May 3, 2012.
- *Fall 2012 Monitoring Event Summary Wellsville/Andover Landfill Site,* dated November 13, 2012.

Starting in 2009 the NYSDEC is requiring a Periodic Review Report (PRR) be completed for the Site annually. This report is the 2012 PRR, documenting that site management requirements are being met. The PRR certification is included as Appendix A of this report.

1.2 Project Background

The Wellsville/Andover Landfill was operated by the Village of Wellsville from 1964 to 1983, accepting both municipal and industrial waste. The site was added to the New York State Superfund and the NYSDEC selected capping with waste consolidation as the remedial action in the Record of Decision (ROD) for the site (NYSDEC 1994). To accomplish the remedy, a contract to remove waste from the northwest and northeast fill areas, and consolidate and cap on the south/south-central fill area, (please see Figure 2) was awarded to IT Corporation and construction activities commenced in April 1996. Following consolidation, the fill was compacted and capped with a 19-acre cover system, which incorporates a passive landfill gas (LFG) venting system, a leachate collection and storage system and a groundwater cut-off trench. Construction activities concluded in

September 1997. The leachate collection system gravity drains to a Leachate Sump (LS-1), from which it is pumped into two 15,000-gal underground storage tanks. The Village of Wellsville transports water from the storage tanks to the Village of Wellsville Publicly Owned Treatment Works (POTW) for treatment. The groundwater cutoff trench is intended to capture up-gradient groundwater from the north and east landfill perimeters prior to contacting waste within the landfill. The north side collection trench drains to Manhole 32 (MH-32) located at the northwest corner of the landfill, while the east side collection trench drains to Manhole 33 (MH-33) at the southeast corner of the landfill. Both MH-32 and MH-33 are piped to drain either to the leachate collection system or to the landfill perimeter surface water drainage channels. To date, water in MH-32 and MH-33 has been drained to the leachate collection system sump. The pipes from the manholes to the drainage channel are closed with removable plugs.

1.3 Summary of 2012 Monitoring, Inspection and Maintenance Activities

This section provides an overview of the monitoring, inspection and maintenance activities completed in 2012.

On-Site has completed the following monitoring events in accordance with procedures set forth in the Approved O&M Plan (Appendix B). Semiannual groundwater and residential monitoring events were conducted in March and September 2012. Details of these monitoring activities are provided in Section 3 through 7.

Quarterly inspections are conducted and documented on the Quarterly Inspection and Maintenance Checklist by Village of Wellsville personnel. Maintenance activities generally include annual mowing of the cap vegetation (completed October 2012), leachate disposal, leachate collection system maintenance and maintenance of the water treatment unit at the LaDue residence (WAL-19). Additional 2012 maintenance activities included the following.

1. Leachate lateral cleaning and leachate manhole cleaning was conducted during June and July 2012.
2. Damaged piezometer PZ-3R was decommissioned in October 2012.
3. Damaged gas vent V-12 was repaired in October 2012.
4. Minor repairs (straightening of protective casing) were completed at monitoring well MW-5D in March 2013.

Quarterly inspection and maintenance checklists as well as documentation of additional maintenance activities are included in Appendix C.

2.0 MONITORING, INSPECTION AND MAINTENANCE REQUIREMENTS

This section outlines monitoring, inspection and maintenance requirements specified by the Approved O&M Plan.

2.1 Monitoring Requirements

The analytical program for the site is based on the requirements of Title 6 NYCRR Subdivision 360-2.11(c) and 360-2.17(f), which applies to groundwater, residential water supplies, surface water, sediment, leachate, and landfill gas. The most recent revisions were approved in May 2009 and began with the fall 2009 sampling event.

Table 2-1 presents the revised monitoring program, with the current analytical list presented as Table 2-2. Sampling locations are presented in Figure 2. Details of the revised monitoring requirements are provided below.

- A total of five monitoring wells and one residential water supply will be sampled for Volatile Organic Compounds (VOCs) during an annual spring sampling event. During the fall sampling events 16 monitoring wells will be sampled for field parameters, VOCs and metals. Surface water location SWS-1, Groundwater cut-off system locations MH-32 and MW-33, and the leachate sampling location LS-1 will be sampled annually in the fall event for the parameters listed on Table 2-1.
- The Village of Wellsville continues to maintain a water filtration system at residential location WAL-19 which is currently owned and occupied by Mr. and Mrs. LaDue at 3914 Snyder Road in Wellsville, NY 14895. This residence will continue to be sampled on a semi-annual basis for VOCs before the filter, inter-filter and after the filter. Residential locations WAL-2 and WAL-5 are sampled on an annual basis during the fall event.
- Static water level elevations are required to be measured in the monitoring wells and six piezometers located on and around the landfill cap as part of sampling events. Water elevations are used to construct potentiometric maps. Table 2-3 provides a tabular listing of the 2012 static water elevations along with well construction information.
- Landfill gas monitoring and perimeter air monitoring are completed during the fall monitoring event for Volatile Organic Compounds (VOCs), Lower Explosive Level (LEL) and Oxygen ($O_{2)}$.

2.2 Inspection and Maintenance Requirements

The inspection and maintenance requirements for the site are specified in the O&M Plan and include the following.

- Quarterly inspections and maintenance (if required) of cover system, leachate collection and storage system, gas venting system, storm water system, groundwater monitoring system, and facility access system (i.e. access roads and gates). Quarterly Inspection and Maintenance Checklists are provided within the O&M Plan and are completed by Village of Wellsville Department of Public Works personnel.
- Annual mowing of the vegetative cover is performed by Village of Wellsville personnel.
- The Village of Wellsville is responsible for maintenance of a water treatment unit at the LaDue residence, located at 3914 Synder Hill Road.

3.0 GROUNDWATER MONITORING RESULTS

Two groundwater monitoring events were completed during 2012. The spring event includes five monitoring wells for VOC analysis, while the fall event is an annual Site wide monitoring event. Prior to purging and collecting groundwater samples, static water levels were measured from the monitoring wells and piezometers. The spring and fall 2012 data were utilized to develop separate potentiometric maps for wells screened in overburden and wells screened in bedrock. The potentiometric maps for 2012 are included as Figures 3 through 6. Each contour represents a line of equivalent groundwater elevation. The direction of groundwater flow is from higher to lower elevation approximately perpendicular to the contours.

Groundwater samples were collected from the five required wells in March 2012, and 15 of 16 wells scheduled were sampled in September 2012 (MW-15S was not sampled due to insufficient water volume). Table 3-1 exhibits the detection frequency, minimum and maximum detection, NYSDEC Class GA Groundwater Standard (Class GA Standard) and the number of Class GA Standard exceedances for groundwater samples collected in 2011 and 2012. Table 3-2 lists the 2012 Class GA and NYSDOH Maximum Contaminant Level (MCL) exceedances by individual wells. Table 3-3 is a tabular listing of groundwater analytical results from the two sampling events completed in 2012. Monitoring well locations are presented in Figure 2. A discussion of the analytical results is provided below.

Inorganic Compounds (metals)

Groundwater samples were analyzed for fifteen inorganic compounds during the September 2012 sampling event (Table 2-2). As shown in Table 3-1, seven metals (Barium, Calcium, Iron, Magnesium, Manganese, Potassium and Sodium) were detected in 2012. The same metals with the addition of Zinc were detected in 2011. Iron,

Manganese and Sodium exceeded Class GA standards in 2011 and 2012 and are the metals that exceed Class GA Standards on a frequent basis. Based upon NYSDEC request, concentration time trend plots for these three metals have been created. Plots, which include data from 1998 through 2012, are presented in Appendix D for monitoring wells that have shown NYSDEC Class GA Standard exceedances for these metals. Monitoring wells CW-3A, CW-3B, CW-4A, CW-4B, MW-3S, MW-4D, MW-5D, MW-5S, MW-15S, MW-17S, MW-17D, MW-18S and MW-18D are included. In general, no obvious increasing or decreasing time trends are apparent. The three metals have been detected at various concentrations above standards at both upgradient and downgradient wells. These metals are common constituents of soil and often occur naturally at the concentrations detected in Site groundwater.

VOCs

Groundwater from each well sampled during both the March and September 2012 sampling events were analyzed for VOCs, which include 36 compounds (Table 2-2). In 2011 and 2012, 20 groundwater samples were analyzed for VOCs. In 2011 and 2012 cis-1,2-dichloroethene (cDCE), trichloroethylene (TCE) and Vinyl chloride were detected and exceeded Class GA Standards. These three VOCs most commonly exceed the Class GA Standard. Based upon NYSDEC request, concentration time trend plots for these three VOCs have been created. The plots include data from 1998 through 2012 and are included in Appendix D for monitoring wells that have shown NYSDEC Class GA Standard exceedances for these compounds. These monitoring wells include CW-3A, CW-3B, CW-4A, CW-4B, MW-3D, MW-4D, MW-5S, MW-5D, MW-11S, MW-15S, MW-16S and MW-18S. The VOC graphs show some trends as discussed below.

- Well CW-3A exhibited TCE at anomalous high results in June 2005, but has returned to lower levels the last 12 samplings with a decreasing trend evident since September 2007. cDCE has been stable with the exception of an increase in June 2005, while Vinyl chloride has been non-detect except for in June 2005.
- CW-3B shows a potential increasing trend in TCE concentration. cDCE concentrations have generally leveled off and Vinyl chloride has been mainly non-detect.
- CW-4A shows results as non-detect for TCE and Vinyl chloride the last 15 samplings, while cDCE has shown a slight decreasing trend.
- CW-4B shows TCE and Vinyl chloride results as non-detect the last 17 samplings and cDCE has been non-detect the last 11 events.
- MW-3D has shown non-detect or low level concentrations of cDCE, TCE and Vinyl chloride since 2004.

- MW-4D exhibits an apparent seasonal fluctuation in VOCs with an inverse proportional relationship to groundwater elevation. Elevated concentrations of primarily cDCE occur when groundwater elevations are low (generally fall) and then decrease when groundwater elevations are high (generally spring). However, this seasonal fluctuation is not represented in the graph for the period of 2003 to 2007 and 2009 to 2011 when substantial seasonal groundwater fluctuations were not observed. TCE has been non-detect the last 12 samplings; while Vinyl chloride has been stable or slight decreasing trend since 2008.
- Prior to 2005, well MW-5S exhibits an overall slight decreasing trend in cDCE, TCE and Vinyl chloride. Since 2005 these compounds appear mainly stable.
- MW-5D exhibits no obvious increasing or decreasing trend. However, cDCE has has shown a decrease in concentration since 2009.
- MW-11S was sampled in June 1998 and then semi-annually starting in December 2004. Vinyl chloride has remained near or below detection limits. cDCE has shown a slight decreasing trend through 2009 and has shown stable results since 2009. With the exception of the decrease in 2009, TCE does not seem to be following an increasing or decreasing trend. However, TCE concentration appears to be inversely proportional to groundwater elevation, similar to MW-4D..
- Well MW-15S has no discernable trends other than the detection of cDCE at concentrations between 0.011 mg/L and 0.057 mg/L, and TCE and Vinyl chloride have been mostly non-detect or at low level concentrations. Comparisons cannot be made for 2012 because the well had an insufficient water volume and a sample was not collected.
- MW-16S has been sampled on the same frequency as MW-11S. MW-16S cDCE, TCE and Vinyl chloride results are near or below detection limits.
- MW-17S does not seem to follow a time trend but does show a correlation between TCE and Vinyl chloride, while cDCE has shown results of non-detect to 0.13 mg/L.
- At MW-18S, previously no time trend was obvious, but since 2008 there has been a decreasing trend in cDCE and TCE, while Vinyl chloride has not been detected.

4.0 SURFACE WATER AND SEDIMENT MONITORING RESULTS

Surface water and sediment location SWS-1 is positioned at the southwest corner of the landfill at the downstream side of the culvert within the drainage ditch that leads to an unnamed tributary to Duffy Hollow Creek (Figure 2). Both the unnamed tributary and

Duffy Hollow Creek are classified as NYSDEC Class C streams. Surface water and sediment sampling at SWS-1 is required on an annual basis during the fall event. However, sampling was not conducted during 2012 due to dry, no flow conditions. Historic surface water and sediment results are presented in tables 4-1 and 4-2. The 2011 surface water results are below Class C Standards and VOCs were not detected. The 2011 sediment results are typical of historic results and VOCs were not detected. Surface water seeps along the perimeter of the landfill were not observed active during 2012; therefore no seep samples were collected.

5.0 LEACHATE SUMP AND MANHOLE MONITORING RESULTS

Water samples are required to be collected at the leachate sump (LS-1) and two manholes (MH-32 and MH-33) annually. Sampling locations are presented in Figure 2. Table 5-1 exhibits the detection frequency, minimum and maximum detection for leachate sump and manhole samples collected in 2011 and 2012. Table 5-2 is a tabular listing of current and historic leachate sump analytical results. Wet Chemistry parameters are no longer required to be analyzed at Leachate sump sampling locations. Table 5-3 is a tabular listing of current and historic manhole analytical results. Nitrate Nitrogen and Total Dissolved Solids (TDS) are required for groundwater cut-off system samples. A discussion of leachate sump and manhole analytical results is provided below.

5.1 Leachate Sump Results

Metals

Metals were analyzed in one leachate sump sample during 2012. Metals detected in 2012 include Arsenic, Barium, Calcium, Iron, Lead, Magnesium, Manganese, Potassium, Sodium and Zinc. The same metals were detected in 2011 with the exception of Lead and Zinc. 2012 results are consistent of historic data.

VOCs

VOCs were analyzed in one leachate sump sample during 2012 with cDCE and Vinyl chloride detected. VOC leachate sump results are consistent with historic results.

5.2 Manhole Monitoring Results

Metals

Metals were analyzed in two manhole samples in 2012. Metals detected in 2012 at MH-32 include Barium, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium and Zinc. The same metals were detected at MH-33 and with the exception of Potassium and Zinc.

2012 Metals results are consistent with historic data.

VOCs

VOCs were analyzed in two manhole samples in 2012. cDCE and Vinyl chloride were detected at MH-32; while MH-33 exhibited non-detect VOCs. 2012 VOC results are consistent with previous analyses.

Wet Chemistry

Nitrate Nitrogen was not detected in MH-32 samples during the last three samplings, while MH-33 analysis shows detections of Nitrate Nitrogen in 2010 and 2011. TDS has been reported at concentrations ranging from 267 mg/L to 684 mg/L the last three samplings with four of the six results below the Class C surface water standard.

6.0 AIR MONITORING RESULTS

Air monitoring at the landfill perimeter, gas vents and LCS locations was conducted during the Fall 2012 event utilizing a Photo Ionization Detector (PID) and an Oxygen (O_2)/Lower Explosive Limit (LEL) meter (please see Figure 7 for monitoring locations).

Prior to commencing air monitoring, the air monitoring instruments were properly calibrated according to manufacturer specifications. PID readings at the gas vents, LCS manholes and clean-out vents range from 0.5 ppm to 142.7 ppm, O_2 levels range from 0.4% to 20.9%, and LEL levels range from 0% to greater than 100%, indicating the presence of methane gas. Upwind and downwind PID and LEL readings at the landfill perimeter were not above background readings indicating no measurable landfill gas at the landfill perimeter. O_2 readings at the landfill perimeter were within normal range. All readings were recorded in tabular form and are presented in Table 6-1.

7.0 RESIDENTIAL WATER SUPPLY MONITORING RESULTS

Two residential water supply sampling events were completed during 2012. The sampling events were conducted in March and September 2012. Prior to the approved revisions to the O&M plan made in May 2009, there were 20 residential water supply locations in the monitoring program. The current monitoring schedule requires that one water supply (WAL-19) be sampled semi-annually (spring and fall) and the remaining two locations (WAL-2 and WAL-5) be sampled annually.

Table 7-1 presents an overview of residential sampling locations and sampling

frequencies during 2012. Figure 2 shows the approximate sampling locations.

A total of eight residential water samples were collected in 2012. Table 7-2 exhibits the detection frequency, minimum and maximum detection, NYSDOH MCL, number of NYSDOH MCL exceedances, NYSDEC Class GA Standard and the number of Class GA Standard exceedances for both 2011 and 2012. Table 7-3 is a tabular listing of 2012 residential water analytical results. A discussion of the analytical results is provided below.

Metals

Metals detected in 2012 include Barium, Calcium, Copper, Iron, Magnesium, Manganese, and Sodium. The same metals were detected during 2011 with the addition of Potassium, and Zinc. In 2011 and 2012, metals with either or both exceedances of the NYSDEC Class GA Standards and the NYSDOH MCLs include Iron, Manganese and Sodium.

VOCs

During 2011 and 2012, residential water samples were analyzed for VOCs with two parameters detected (cDCE and TCE). These detections were at WAL-19 prior to filtration and were below the NYSDOH MCLs and NYSDEC Class GA Standards in 2011 and 2012.

8.0 INSPECTIONS AND MAINTENANCE ACTIVITES

Quarterly Inspections and routine maintenance were performed by Village of Wellsville personnel and recorded on the Quarterly Inspection and Maintenance Checklist provided in the O&M Plan. Quarterly inspections were completed on March 30, June 28, September 27 and December 31, 2012. No unresolved problems were noted on inspection forms. The 2012 completed inspection forms are included as Appendix C.

A description of maintenance activities performed during 2012 is provided below with additional details provided in Appendix C.

- Village of Wellsville personnel mowed the landfill cap in October 2012.
- Leachate lateral cleaning and leachate manhole cleaning was conducted during June and July 2012.
- Damaged piezometer PZ-3R was decommissioned in October 2012 by removing the surface completion to below grade and grouting the remaining portion of the piezometer in place. The geosynthetic liner at the piezometer location was then

properly repaired by Terrafix, an experienced geosynthetic contractor. Photographic documentation is included in Appendix C.

- Damaged gas vent V-12 was repaired in October 2012. The repair included replacing a broken PVC coupler directly below grade and repairing the geosynthetic cap. Terrafix completed the geosynthetic liner repair. Photographic documentation is included in Appendix C.
- The Village of Wellsville continues to maintain a water treatment unit at the LaDue (WAL-19) residence.

A total of approximately 1,643,350 gallons of leachate was hauled from the Landfill to the Village of Wellsville POTW during 2012. The table below lists the total leachate gallons by year for the previous six years. The increased volume observed during 2011 is directly related to the increase in precipitation during 2011.

Year/Gallons	2007	2008	2009	2010	2011	2012
	1,797,704	1,482,179	1,623,591	1,581,614	2,359,104	1,643,350

9.0 CONCLUSIONS

Monitoring and maintenance activities are being performed as required at the Wellsville/Andover Landfill. Routine maintenance and inspections are being conducted to maintain the Site. The Site has been monitored for over 14 years following completion of the remedial action. Monitoring will continued as required by the approved plan.

Maintenance activities planned for 2013 include scheduled annual mowing and leachate tank cleaning. Also a target range for use by the Village of Wellsville Police Department is scheduled to be constructed in the northwest portion of the property several hundred yards north of the landfill area.

This 2012 annual report is submitted as part of the Site Management Periodic Review required by the NYSDEC. An electronic copy of this report is included as Appendix E.

Table 2-1

Monitoring Requirements
Wellsville/Andover Landfill
Wellsville, New York

Location	Revised Sampling Frequency	Spring Analyte List[1]	Fall Analyte List[1]
Groundwater			
CW-3A	Annual - Fall	WL	Field, VOCs, Metals
CW-3B	Annual - Fall	WL	Field, VOCs, Metals
CW-4A	Annual - Fall	WL	Field, VOCs, Metals
CW-4B	Annual - Fall	WL	Field, VOCs, Metals
MW-15DA	NR	WL	NR
MW-15S	Annual - Fall	WL	Field, VOCs, Metals
MW-17D	Annual - Fall	WL	Field, VOCs, Metals
MW-17S	Annual - Fall	WL	Field, VOCs, Metals
MW-18D	Annual - Fall	WL	Field, VOCs, Metals
MW-18S	Annual - Fall	WL	Field, VOCs, Metals
MW-1D	NR	WL	NR
MW-3D	Annual - Fall	WL	Field, VOCs, Metals
MW-3S	Annual - Fall	WL	Field, VOCs, Metals
MW-4D	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-5D	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-5S	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-11S	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
MW-16S	Semiannual - Spring/Fall	WL, VOCs	Field, VOCs, Metals
Leachate			
LS-1	Annual - Fall	NR	Field, VOCs, Metals

Location	Revised Sampling Frequency	Spring Analyte List[1]	Fall Analyte List[1]
Residential Water Supply			
WAL-2	Annual - Fall	NR	Metals
WAL-5	Annual - Fall	NR	VOCs[6], Metals
WAL-19	Semiannual - Spring/Fall	VOCs[2,6]	VOCs[2,6]
Landfill Gas Monitoring			
Vents	Annual - Fall	NR	PID, LEL, O_2
Leachate Clean-outs	Annual - Fall	NR	PID, LEL, O_2
Manholes	Annual - Fall	NR	PID, LEL, O_2
Perimeter	Annual - Fall	NR	PID, LEL, O_2
Surface Water			
SWS-1	Annual - Fall	NR	Field, VOCs, Metals, Wet Chem[3]
Sediment			
SWS-1	Annual - Fall	NR	Field, VOCs, Metals, Wet Chem[3]
Groundwater Cut-Off System			
MH-32	Annual - Fall	NR	Field, VOCs, Metals, NO_3, TDS
MH-33	Annual - Fall	NR	Field, VOCs, Metals, NO_3, TDS

Reporting	
Spring Event	Summary Letter[4]
Fall Event	Summary Letter[4]
Annual	Detailed Annual Report[5]

Notes

(Revised monitoring prorgram is based on: April 3, 2009 On-Site letter *Site Monitoring Evaluation and Proposed Revised Monitoring Program*; NYSDEC May 12, 2009 response; and follow up e-mail.)

NR - Not required unless site conditions warrant (I.e., significant leachate breakout, leachate spill, etc.)

WL - Water level

[1] - Field = Field Parameters (pH, Conductivity, Dissolved Oxygen, Turbidity, Oxidation Reduction Potential)
- VOCs = Volatile Organic Compounds method 8260
- Metals = As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Na, Z
- NO_3 = Nitrate Nitrogen and TDS = Total Dissolved Solids

[2] WAL-19 tested for VOCs prior to filters, between filters and after filters

[3] Wet Chemistry - Color, TOC, Total Phenolics, Alkalinity, BOD, Cl, Br, SO_4, TDS, NO_3, NH_3, COD, TKN

[4] Letter reports will include a summary of the sampling event and provide the event's analytical report

[5] Annual reports will include details of the previous years monitoring and O&M activities along with potentiometric maps and comparison of results to standards and historic results

[6] Residential VOCs are tested using method 524.2

Table 2-2

Approved Analyte List
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Field Parameters
Specific Conductance
Temperature
Field pH
Oxygen Reduction Potential
Dissolved Oxygen
Turbidity

Inorganic Compounds
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Manganese
Magnesium
Nickel
Potassium
Selenium
Sodium
Zinc

Wet Chemistry
Nitrate Nitrogen
Total Dissolved Solids

Note:
Analyte list shown above pertains to groundwater, leachate, surface water and sediment samples.

Volatile Organic Compounds
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
2-Butanone (MEK)
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
m&p-Xylene
o-Xylene
Styrene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Vinyl chloride

Table 2-3

Well Construction and 2012 Static Water Level Information
Wellsville/Andover Landfill
Wellsville, New York

Well Number	Well Diameter (in)	TOC Elevation (ft amsl)	Protective Casing Elevation (ft amsl)	Ground Elevation (ft amsl)	Well Depth from TOC (ft)	Screened Interval from Ground (ft)	Screened Bedrock or Overburden	3/14/2012 DTW From TOC (ft)	3/14/2012 Static Water Elevation (ft amsl)	8/31/2012 DTW From TOC (ft)	8/31/2012 Static Water Elevation (ft amsl)
MW-1D	2	2193.32	2193.75	2190.6	77.39	64 - 74	Bedrock	66.36	2126.96	69.25	2124.07
MW-3D	2	2095.80	2096.07	2092.4	46.75	30 - 40	Bedrock	17.42	2078.38	19.93	2075.87
MW-3S	2	2095.70	2095.96	2093.1	25.92	9 - 19	Overburden	11.05	2084.65	11.70	2084.00
MW-4D	2	2092.22	2092.39	2090.3	24.63	12 - 22	Bedrock	11.49	2080.73	16.23	2075.99
MW-5D	2	2066.87	2067.26	2065.4	37.74	26.5 - 36.5	Bedrock	1.62	2065.25	4.07	2062.80
MW-5S	2	2067.30	2067.59	2065.5	21.20	10 - 20	Overburden	2.03	2065.27	3.98	2063.32
MW-7D	2	2012.13	2012.69	2009.6	47.97	35 - 45	Bedrock	36.30	1975.83	37.60	1974.53
MW-11S	2	2003.52	2003.86	2001.6	20.40	18-Aug	Overburden	5.17	1998.35	7.68	1995.84
MW-15S	2	2022.88	2023.05	2020.2	22.10	9 - 19	Overburden	Dry	<2000.80	21.98	2000.90
MW-15DA	2	2022.67	2023.08	2020.4	56.28	43 - 53	Bedrock	56.12	1966.55	56.31	1966.36
MW-16D	2	1924.73	1925.25	1922.0	53.00	40 - 50	Bedrock	29.54	1895.19	31.12	1893.61
MW-16S	2	1924.98	1925.15	1922.2	18.67	6 - 16	Overburden	8.74	1916.24	14.03	1910.95
MW-17D	4	2037.36	NA	2034.9	65.1	48 - 63 (open hole)	Bedrock	32.30	2005.06	33.29	2004.07
MW-17S	2	2037.92	2038.12	2035.5	26.94	9 - 24	Overburden	9.96	2027.96	11.25	2026.67
MW-18D	4	2066.19	NA	2062.6	28.50	24.5 - 39.5 (open hole)	Bedrock	14.90	2051.29	14.69	2051.50
MW-18S	2	2064.60	2065.72	2063.0	20.49	4 - 19	Overburden	4.95	2059.65	10.46	2054.14
CW-3A	2	2013.75	2013.90	2012.9	27.47	21 - 26	Overburden	8.33	2005.42	9.67	2004.08
CW-3B	2	2013.90	2014.10	2012.9	37.70	33.5 - 38.5	Overburden	21.89	1992.01	21.63	1992.27
CW-4A	2	2006.11	2006.35	2004.7	19.12	13 - 18	Overburden	3.41	2002.70	6.38	1999.73
CW-4B	2	2005.84	2005.93	2004.7	30.16	25.5 - 30.5	Overburden	2.91	2002.93	5.85	1999.99
PZ-1	2	2095.11	2095.27	2092.2	NM	6 - 13	Overburden/ Refuse	13.31	2081.80	12.83	2082.28
PZ-2	2	2095.83	2096.13	2092.9	NM	14 - 24	Overburden/ Refuse	21.70	2074.13	23.20	2072.63
PZ-3R	2	2085.50	2085.79	2084.0	NM	22.5 - 32.5	Overburden/ Refuse	Decommissioned October 2012			
PZ-4	2	2067.13	2067.38	2064.4	NM	12 - 22	Overburden/ Refuse	26.78	2040.35	26.19	2040.94
PZ-5	2	2059.71	2059.71	2056.7	NM	8 - 18	Overburden/ Refuse	12.74	2046.97	11.72	2047.99
PZ-6	2	2042.18	2042.31	2039.2	NM	8 - 18	Overburden/ Refuse	22.01	2020.17	21.13	2021.05

Notes:

ND - No Non-Aqueous Phase Liquid (NAPL) Detected
Dry - Insufficient water volume
NM - Not Measured
NA - Not Applicable
NS - Not Sampled

Table 3-1

Summary of 2011 and 2012 Groundwater Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York

Parameter	2011 Detection Frequency	2011 Minimum	2011 Maximum	2012 Detection Frequency	2012 Minimum	2012 Maximum	Class GA Standard	2011 Class GA Exceedances	2012 Class GA Exceedances
Inorganic Compounds									
Arsenic	0/15			0/15			0.025	0	0
Barium	15/15	0.021	0.092	12/15	0.022	0.089	1	0	0
Cadmium	0/15			0/15			0.005	0	0
Calcium	15/15	16.2	126	15/15	15.3	102			
Chromium	0/15			0/15			0.05	0	0
Copper	0/15			0/15			0.2	0	0
Iron	10/15	0.24	10.4	10/15	0.1	9.25	0.3	9	7
Lead	0/15			0/15			0.025	0	0
Magnesium	15/15	4.8	53.7	15/15	1.5	57.6			
Manganese	13/15	0.011	1.13	12/15	0.024	1.12	0.3	6	7
Nickel	0/15			0/15			0.1	0	0
Potassium	10/15	2.4	18.7	10/15	2.1	19.1			
Selenium	0/15			0/15			0.01	0	0
Sodium	15/15	3.4	59.2	15/15	6.4	63	20	5	7
Zinc	3/15	0.022	0.063	0/15					
Volatile Organic Compounds									
1,1,1-Trichloroethane	0/20			0/20			0.005	0	0
1,1,2,2-Tetrachloroethane	0/20			0/20			0.005	0	0
1,1,2-Trichloroethane	0/20			0/20			0.001	0	0
1,1-Dichloroethane	0/20			0/20			0.005	0	0
1,1-Dichloroethene	0/20			0/20			0.005	0	0
1,2-Dibromoethane	0/20			0/20					
1,2-Dichloroethane	0/20			0/20			0.0006	0	0
1,2-Dichloropropane	0/20			0/20			0.001	0	0
2-Butanone (MEK)	0/20			0/20					
2-Hexanone	0/20			0/20					
4-Methyl-2-pentanone	0/20			0/20					
Acetone	0/20			0/20					
Benzene	0/20			0/20			0.001	0	0
Bromodichloromethane	0/20			0/20					
Bromoform	0/20			0/20					
Bromomethane	0/20			0/20			0.005	0	0
Carbon disulfide	0/20			0/20					
Carbon tetrachloride	0/20			0/20			0.005	0	0
Chlorobenzene	0/20			0/20			0.005	0	0
Chloroethane	0/20			0/20			0.005	0	0
Chloroform	0/20			0/20			0.007	0	0
Chloromethane	0/20			0/20			0.005	0	0
cis-1,2-Dichloroethene	11/20	0.0089	1.1	13/20	0.0055	0.94	0.005	11	13
cis-1,3-Dichloropropene	0/20			0/20					
Dibromochloromethane	0/20			0/20					
Dichloromethane (Methylene chloride)	0/20			0/20			0.005	0	0
Ethyl benzene	0/20			0/20			0.005	0	0
m&p-Xylene	0/20			0/20					
o-Xylene	0/20			0/20					
Styrene	0/20			0/20			0.005	0	0
Tetrachloroethene	0/20			0/20			0.005	0	0
Toluene	0/20			0/20			0.005	0	0
trans-1,2-Dichloroethene	0/20			0/20			0.005	0	0
trans-1,3-Dichloropropene	0/20			0/20					
Trichloroethene	8/20	0.012	3	10/20	0.006	3.3	0.005	8	10
Vinyl chloride	5/20	0.025	0.28	6/20	0.03	0.15	0.002	5	6

Note:
Class GA Standard - NYSDEC Class GA Groundwater Standards

Table 3-2

2012 NYSDEC and NYSDOH MCL Groundwater Exceedances
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	March 2012 Results	September 2012 Results	Class GA Standard	NYSDOH MCL
CW-3A	Sodium		42.8	20	
CW-3A	cis-1,2-Dichloroethene		0.013	0.005	0.005
CW-3A	Trichloroethene		0.082	0.005	0.005
CW-3B	Sodium		22.5	20	
CW-3B	cis-1,2-Dichloroethene		0.072	0.005	0.005
CW-3B	Trichloroethene		0.18	0.005	0.005
CW-4A	Iron		0.57	0.3	0.3
CW-4A	Manganese		0.526	0.3	0.3
CW-4B	Manganese		0.605	0.3	0.3
MW-3D	cis-1,2-Dichloroethene		0.0055	0.005	0.005
MW-3S	Sodium		33.7	20	
MW-4D	Iron		0.48	0.3	0.3
MW-4D	Manganese		0.729	0.3	0.3
MW-4D	cis-1,2-Dichloroethene	0.38	0.54 D	0.005	0.005
MW-4D	Vinyl chloride	0.12	0.15	0.002	0.002
MW-5D	Iron		0.33	0.3	0.3
MW-5D	Manganese		0.484	0.3	0.3
MW-5D	cis-1,2-Dichloroethene	0.94	0.23 D	0.005	0.005
MW-5D	Trichloroethene	0.082	0.0095	0.005	0.005
MW-5D	Vinyl chloride	0.11	0.034	0.002	0.002
MW-5S	cis-1,2-Dichloroethene	0.2 D	0.3	0.005	0.005
MW-5S	Trichloroethene	0.04	0.05	0.005	0.005
MW-5S	Vinyl chloride	0.03	0.042	0.002	0.002
MW-11S	Manganese		1.12	0.3	0.3
MW-11S	Sodium		20.2	20	
MW-11S	cis-1,2-Dichloroethene	0.27	0.36	0.005	0.005
MW-11S	Trichloroethene	2.3	3.3	0.005	0.005
MW-17D	Iron		9.25	0.3	0.3
MW-17D	Manganese		0.973	0.3	0.3
MW-17D	Sodium		28.4	20	
MW-17S	Iron		0.51	0.3	0.3
MW-17S	Sodium		63	20	
MW-17S	cis-1,2-Dichloroethene		0.077	0.005	0.005
MW-17S	Trichloroethene		0.015	0.005	0.005
MW-18D	Iron		9.18	0.3	0.3
MW-18D	Manganese		0.547	0.3	0.3
MW-18D	Sodium		21.6	20	
MW-18S	Iron		0.49	0.3	0.3
MW-18S	cis-1,2-Dichloroethene		0.008	0.005	0.005
MW-18S	Trichloroethene		0.006	0.005	0.005

Notes:
Class GA Standard - NYSDEC Class GA Groundwater Standards
NYSDOH MCL - New York State Department of Health Maximum Contaminant Level
D - Concentration is the result of a dilution

Table 3-3

2012 Groundwater Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	CW-3A 9/5/2012	CW-3B 9/5/2012	CW-4A 9/5/2012	CW-4B 9/5/2012	MW-3D 9/5/2012	MW-3S 9/5/2012	MW-4D 3/15/2012	MW-4D 9/4/2012	MW-5D 3/15/2012	MW-5D 9/4/2012
Inorganic Compounds										
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NR	0.01 U	NR	0.01 U
Barium	0.059	0.037	0.054	0.042	0.089	0.039	NR	0.02 U	NR	0.034
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NR	0.005 U	NR	0.005 U
Calcium	102	69.8	27.2	39	40.7	40.9	NR	21.3	NR	16.6
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NR	0.01 U	NR	0.01 U
Copper	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NR	0.02 U	NR	0.02 U
Iron	0.1 U	0.15	0.57	0.1 U	0.1 U	0.1 U	NR	0.48	NR	0.33
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NR	0.005 U	NR	0.005 U
Magnesium	1.5	36	15.5	16.3	12	31	NR	20.4	NR	10.4
Manganese	0.024	0.033	0.526	0.605	0.01 U	0.01 U	NR	0.729	NR	0.484
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	NR	0.04 U	NR	0.04 U
Potassium	19.1	2.7	2 U	2.1	4.3	3	NR	2.4	NR	2 U
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NR	0.01 U	NR	0.01 U
Sodium	42.8	22.5	16	17.1	18.5	33.7	NR	7.6	NR	6.4
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NR	0.02 U	NR	0.02 U
Volatile Organic Compounds										
1,1,1-Trichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,1-Dichloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,2-Dibromoethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.05 U	0.01 U
2-Hexanone	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.05 U	0.01 U
4-Methyl-2-pentanone	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.05 U	0.01 U
Acetone	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.05 U	0.01 U
Benzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Bromodichloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Bromoform	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Bromomethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Carbon disulfide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.025 U	0.025 U	0.05 U	0.01 U
Carbon tetrachloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Chlorobenzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Chloroethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Chloroform	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Chloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
cis-1,2-Dichloroethene	0.013	0.072	0.005 U	0.005 U	0.0055	0.005 U	0.38	0.54 D	0.94	0.23 D
cis-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Dibromochloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Dichloromethane (Methylene chloride)	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Ethyl benzene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
m&p-Xylene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
o-Xylene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Styrene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Tetrachloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Toluene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
trans-1,2-Dichloroethene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.025 U	0.005 U
Trichloroethene	0.082	0.18	0.005 U	0.005 U	0.005 U	0.005 U	0.013 U	0.013 U	0.082	0.0095
Vinyl chloride	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.12	0.15	0.11	0.034

Please see page 2 for notes.

Table 3-3

2012 Groundwater Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	MW-5S 3/14/2012	MW-5S 9/4/2012	MW-11S 3/15/2012	MW-11S 9/5/2012	MW-16S 3/14/2012	MW-16S 9/5/2012	MW-17D 9/4/2012	MW-17S 9/4/2012	MW-18D 9/4/2012	MW-18S 9/4/2012
Inorganic Compounds										
Arsenic	NR	0.01 U	NR	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium	NR	0.02 U	NR	0.026	NR	0.02 U	0.022	0.037	0.058	0.057
Cadmium	NR	0.005 U	NR	0.005 U	NR	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium	NR	15.3	NR	58.1	NR	16.3	57.4	87	26	43
Chromium	NR	0.01 U	NR	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	NR	0.02 U	NR	0.02 U	NR	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Iron	NR	0.13	NR	0.1	NR	0.1 U	9.25	0.51	9.18	0.49
Lead	NR	0.005 U	NR	0.005 U	NR	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	NR	11.5	NR	36	NR	9.8	22.5	57.6	16.6	22.2
Manganese	NR	0.112	NR	1.12	NR	0.01 U	0.973	0.123	0.547	0.216
Nickel	NR	0.04 U	NR	0.04 U	NR	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Potassium	NR	2 U	NR	2 U	NR	2 U	2.9	3.7	2.8	2.4
Selenium	NR	0.01 U	NR	0.01 U	NR	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Sodium	NR	7	NR	20.2	NR	8.6	28.4	63	21.6	8.7
Zinc	NR	0.02 U	NR	0.02 U	NR	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Volatile Organic Compounds										
1,1,1-Trichloroethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1-Dichloroethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,1-Dichloroethene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dibromoethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichloroethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichloropropane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2-Butanone (MEK)	0.01 U	0.02 U	0.25 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Hexanone	0.01 U	0.02 U	0.25 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone	0.01 U	0.02 U	0.25 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	0.01 U	0.02 U	0.25 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Bromodichloromethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Bromoform	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Bromomethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon disulfide	0.01 U	0.02 U	0.25 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Carbon tetrachloride	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chlorobenzene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloroethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloroform	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloromethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
cis-1,2-Dichloroethene	0.2 D	0.3	0.27	0.36	0.005 U	0.005 U	0.005 U	0.077	0.005 U	0.008
cis-1,3-Dichloropropene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Dibromochloromethane	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Dichloromethane (Methylene chloride)	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Ethyl benzene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
m&p-Xylene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Styrene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Tetrachloroethene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Toluene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
trans-1,2-Dichloroethene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.01 U	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Trichloroethene	0.04	0.05	2.3	3.3	0.005 U	0.005 U	0.005 U	0.015	0.005 U	0.006
Vinyl chloride	0.03	0.042	0.13 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U

Notes:
U - Concentration not detected at specified detection limit
NR - Not required
D - Concentration is the result of a dilution

Please see page 2 for notes.

Table 4-1

Current and Historic Surface Water Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L except where noted)

Parameter	SWS-1 4/28/2009	SWS-1 9/28/2011	Class C Standard
Inorganic Compounds			
Arsenic	0.01 U	0.01 U	
Barium	0.045	0.036	
Cadmium	0.005 U	0.005 U	
Calcium	61.8	33.1	
Chromium	0.01 U	0.01 U	
Copper	0.02 U	0.02 U	
Iron	0.31	0.78	
Lead	0.005 U	0.005 U	0.008
Magnesium	23.3	10.2	
Manganese	0.515	0.06	
Nickel	0.04 U	0.04 U	0.0082
Potassium	3.8	2 U	
Selenium	0.01 U	0.01 U	
Sodium	35.8	25.8	
Zinc	0.106	0.054	
Volatile Organic Compounds			
1,1,1-Trichloroethane	0.005 U	0.005 U	
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	
1,1,2-Trichloroethane	0.005 U	0.005 U	
1,1-Dichloroethane	0.005 U	0.005 U	
1,1-Dichloroethene	0.005 U	0.005 U	
1,2-Dibromoethane	0.005 U	0.005 U	
1,2-Dichloroethane	0.005 U	0.005 U	
1,2-Dichloropropane	0.005 U	0.005 U	
2-Butanone (MEK)	0.01 U	0.01 U	
2-Hexanone	0.01 U	0.01 U	
4-Methyl-2-pentanone	0.01 U	0.01 U	
Acetone	0.02 U	0.02 U	
Benzene	0.005 U	0.005 U	
Bromodichloromethane	0.005 U	0.005 U	
Bromoform	0.005 U	0.005 U	
Bromomethane	0.005 U	0.005 U	
Carbon disulfide	0.01 U	0.01 U	
Carbon tetrachloride	0.005 U	0.005 U	
Chlorobenzene	0.005 U	0.005 U	0.005
Chloroethane	0.005 U	0.005 U	
Chloroform	0.005 U	0.005 U	
Chloromethane	0.005 U	0.005 U	
cis-1,2-Dichloroethene	0.005 U	0.005 U	
cis-1,3-Dichloropropene	0.005 U	0.005 U	
Dibromochloromethane	0.005 U	0.005 U	
Dichloromethane (Methylene chloride)	0.005 U	0.005 U	0.2

Parameter	SWS-1 4/28/2009	SWS-1 9/28/2011	Class C Standard
VOC's Continued			
Ethyl benzene	0.005 U	0.005 U	
m&p-Xylene	0.005 U	0.005 U	
o-Xylene	0.005 U	0.005 U	
Styrene	0.005 U	0.005 U	
Tetrachloroethene	0.005 U	0.005 U	
Toluene	0.005 U	0.005 U	6
trans-1,2-Dichloroethene	0.005 U	0.005 U	
trans-1,3-Dichloropropene	0.005 U	0.005 U	
Trichloroethene	0.005 U	0.005 U	0.04
Vinyl chloride	0.005 U	0.005 U	
Wet Chemistry			
Alkalinity	242	152	
Ammonia Nitrogen	0.058	0.05 U	
Biochemical Oxygen Demand	2 U	2 U	
Bromide	1 U	1 U	
Chemical Oxygen Demand	30.2	38	
Chloride	70.7	20.8	
Color (True) (C.U.)	35	58	
Hardness	270		
Nitrate Nitrogen		1 U	
Sulfate	3.1	6.7	
Total Dissolved Solids	373	218	500
Total Kjeldahl Nitrogen	0.76	0.62	
Total Organic Carbon (TOC)	12.7	12.9	
Total Phenolics	0.005 U	0.005 U	

Notes:
Class C Standard - NYSDEC Class C Surface Water Standard
Concentrations in **bold** exceed Class C Standards
U - Concentration not detected at specified detection limit

Table 4-2

Current and Historic Sediment Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/Kg except where noted)

Parameter	SWS-1 4/28/2009	SWS-1 9/28/2011
Inorganic Compounds		
Arsenic	10.3	8
Barium	89.4	114
Cadmium	1.4 U	1.6 U
Calcium	17200	3790
Chromium	13.8	14.9
Copper	20.9	20.7
Iron	19700	22500
Lead	14	16 U
Magnesium	3680	3810
Manganese	845	1120
Nickel	19	23
Potassium	2490	2220
Selenium	2.8 U	3.2 U
Sodium	280 U	380 U
Zinc	2670	273
Volatile Organic Compounds		
1,1,1-Trichloroethane	0.014 U	0.017 U
1,1,2,2-Tetrachloroethane	0.014 U	0.017 U
1,1,2-Trichloroethane	0.014 U	0.017 U
1,1-Dichloroethane	0.014 U	0.017 U
1,1-Dichloroethene	0.014 U	0.017 U
1,2-Dibromoethane	0.014 U	0.017 U
1,2-Dichloroethane	0.014 U	0.017 U
1,2-Dichloropropane	0.014 U	0.017 U
2-Butanone (MEK)	0.029 U	0.017 U
2-Hexanone	0.029 U	0.017 U
4-Methyl-2-pentanone	0.029 U	0.017 U
Acetone	0.1	0.017 U
Benzene	0.014 U	0.017 U
Bromodichloromethane	0.014 U	0.017 U
Bromoform	0.014 U	0.017 U
Bromomethane	0.014 U	0.017 U
Carbon disulfide	0.029 U	0.017 U
Carbon tetrachloride	0.014 U	0.017 U
Chlorobenzene	0.014 U	0.017 U
Chloroethane	0.014 U	0.017 U
Chloroform	0.014 U	0.017 U
Chloromethane	0.014 U	0.017 U
cis-1,2-Dichloroethene	0.014 U	0.017 U
cis-1,3-Dichloropropene	0.014 U	0.017 U
Dibromochloromethane	0.014 U	0.017 U
Dichloromethane (Methylene chloride)	0.014 U	0.017 U

Parameter	SWS-1 4/28/2009	SWS-1 9/28/2011
VOC's Continued		
Ethyl benzene	0.014 U	0.017 U
m&p-Xylene	0.014 U	0.034 U
o-Xylene	0.014 U	0.017 U
Styrene	0.014 U	0.017 U
Tetrachloroethene	0.014 U	0.017 U
Toluene	0.057	0.017 U
trans-1,2-Dichloroethene	0.014 U	0.017 U
trans-1,3-Dichloropropene	0.014 U	0.017 U
Trichloroethene	0.014 U	0.017 U
Vinyl chloride	0.014 U	0.017 U
Wet Chemistry		
Alkalinity	5120	5220
Ammonia Nitrogen	61	56
Biochemical Oxygen Demand	1510	
Bromide	29 U	34 U
Chemical Oxygen Demand	67100	165000
Chloride	365	420
Nitrate Nitrogen		34 U
Sulfate	58 U	119
Total Kjeldahl Nitrogen	1940	5050
Total Organic Carbon (TOC)	27500	32300
Total Phenolics	0.29 U	0.33 U
Total Solids (%)	34.6	29.5

Note:
U - Concentration not detected at specified detection limit

Table 5-1

2011 and 2012 Summary of Leachate Sump and Manhole Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2011 Detection Frequency	2011 Minimum	2011 Maximum	2012 Detection Frequency	2012 Minimum	2012 Maximum
Inorganic Compounds						
Arsenic	1/3	0.017	0.017	1/3	0.104	0.104
Barium	3/3	0.062	0.139	3/3	0.041	0.245
Cadmium	0/3			0/3		
Calcium	3/3	70.5	119	3/3	113	158
Chromium	0/3			0/3		
Copper	0/3			0/3		
Iron	3/3	1.61	9.93	3/3	0.41	88.8
Lead	0/3			1/3	0.025	0.025
Magnesium	3/3	16.1	33.3	3/3	22.3	39.6
Manganese	3/3	1.01	5.17	3/3	0.838	6.39
Nickel	0/3			0/3		
Potassium	2/3	2.4	4.4	2/3	6.4	10.2
Selenium	0/3			0/3		
Sodium	3/3	4.7	22.9	3/3	11.9	31.2
Zinc	0/3			2/3	0.035	0.053
Volatile Organic Compounds						
1,1,1-Trichloroethane	0/3			0/3		
1,1,2,2-Tetrachloroethane	0/3			0/3		
1,1,2-Trichloroethane	0/3			0/3		
1,1-Dichloroethane	0/3			0/3		
1,1-Dichloroethene	0/3			0/3		
1,2-Dibromoethane	0/3			0/3		
1,2-Dichloroethane	0/3			0/3		
1,2-Dichloropropane	0/3			0/3		
2-Butanone (MEK)	0/3			0/3		
2-Hexanone	0/3			0/3		
4-Methyl-2-pentanone	0/3			0/3		
Acetone	0/3			0/3		
Benzene	0/3			0/3		
Bromodichloromethane	0/3			0/3		
Bromoform	0/3			0/3		
Bromomethane	0/3			0/3		
Carbon disulfide	0/3			0/3		
Carbon tetrachloride	0/3			0/3		
Chlorobenzene	0/3			0/3		
Chloroethane	0/3			0/3		
Chloroform	0/3			0/3		
Chloromethane	0/3			0/3		
cis-1,2-Dichloroethene	3/3	0.016	3	2/3	0.065	0.077
cis-1,3-Dichloropropene	0/3			0/3		
Dibromochloromethane	0/3			0/3		
Dichloromethane (Methylene chloride)	0/3			0/3		
Ethyl benzene	0/3			0/3		
m&p-Xylene	0/3			0/3		
o-Xylene	0/3			0/3		
Styrene	0/3			0/3		
Tetrachloroethene	0/3			0/3		
Toluene	0/3			0/3		
trans-1,2-Dichloroethene	0/3			0/3		
trans-1,3-Dichloropropene	0/3			0/3		
Trichloroethene	0/3			0/3		
Vinyl chloride	2/3	0.0092	0.24	2/3	0.0071	0.0082
Wet Chemistry						
Nitrate Nitrogen	1/2	2.8	2.8	0/2		
Total Dissolved Solids	2/2	267	357	2/2	429	601

Table 5-2

Current and Historic Leachate Sump Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	LS-1 9/14/2010	LS-1 9/27/2011	LS-1 9/6/2012
Inorganic Compounds			
Arsenic	0.01 U	0.01 U	0.104
Barium	0.12	0.139	0.245
Cadmium	0.005 U	0.005 U	0.005 U
Calcium	125	119	158
Chromium	0.01 U	0.01 U	0.01 U
Copper	0.02 U	0.02 U	0.02 U
Iron	1.92	1.61	88.8
Lead	0.005 U	0.005 U	0.025
Magnesium	31.2	33.3	39.6
Manganese	1.87	5.17	6.39
Nickel	0.04 U	0.04 U	0.04 U
Potassium	4.6	4.4	6.4
Selenium	0.01 U	0.01 U	0.01 U
Sodium	21.2	22.9	31.2
Zinc	0.02 U	0.02 U	0.035
Volatile Organic Compounds			
1,1,1-Trichloroethane	0.005 U	0.005 U	0.005 U
1,1,2,2-Tetrachloroethane	0.005 U	0.005 U	0.005 U
1,1,2-Trichloroethane	0.005 U	0.005 U	0.005 U
1,1-Dichloroethane	0.005 U	0.005 U	0.005 U
1,1-Dichloroethene	0.005 U	0.005 U	0.005 U
1,2-Dibromoethane	0.005 U	0.005 U	0.005 U
1,2-Dichloroethane	0.005 U	0.005 U	0.005 U
1,2-Dichloropropane	0.005 U	0.005 U	0.005 U
2-Butanone (MEK)	0.01 U	0.01 U	0.01 U
2-Hexanone	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone	0.01 U	0.01 U	0.01 U
Acetone	0.02 U	0.02 U	0.01 U
Benzene	0.005 U	0.005 U	0.005 U
Bromodichloromethane	0.005 U	0.005 U	0.005 U
Bromoform	0.005 U	0.005 U	0.005 U
Bromomethane	0.005 U	0.005 U	0.005 U
Carbon disulfide	0.01 U	0.01 U	0.01 U
Carbon tetrachloride	0.005 U	0.005 U	0.005 U
Chlorobenzene	0.005 U	0.005 U	0.005 U
Chloroethane	0.005 U	0.005 U	0.005 U
Chloroform	0.005 U	0.005 U	0.005 U
Chloromethane	0.005 U	0.005 U	0.005 U
cis-1,2-Dichloroethene	0.0073	0.16	0.077
cis-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U
Dibromochloromethane	0.005 U	0.005 U	0.005 U
Dichloromethane (Methylene chloride)	0.005 U	0.005 U	0.005 U
Ethyl benzene	0.005 U	0.005 U	0.005 U
m&p-Xylene	0.005 U	0.005 U	0.005 U
o-Xylene	0.005 U	0.005 U	0.005 U
Styrene	0.005 U	0.005 U	0.005 U
Tetrachloroethene	0.005 U	0.005 U	0.005 U
Toluene	0.005 U	0.005 U	0.005 U
trans-1,2-Dichloroethene	0.005 U	0.005 U	0.005 U
trans-1,3-Dichloropropene	0.005 U	0.005 U	0.005 U
Trichloroethene	0.005 U	0.005 U	0.005 U
Vinyl chloride	0.005 U	0.0092	0.0082

Note:
U - Concentration not detected at specified detection limit

Table 5-3

Current and Historic Manhole Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	MH-32 9/15/2010	MH-32 9/28/2011	MH-32 9/5/2012	MH-33 9/15/2010	MH-33 9/28/2011	MH-33 9/5/2012	Class C Standard
Inorganic Compounds							
Arsenic	0.01 U	0.017	0.01 U	0.01 U	0.01 U	0.01 U	
Barium	0.177	0.112	0.107	0.034	0.062	0.041	
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	
Calcium	141	91.2	131	105	70.5	113	
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Copper	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	
Iron	46.8	9.93	16	0.91	6.3	0.41	0.3
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.008
Magnesium	37.1	18.9	30.5	22.1	16.1	22.3	
Manganese	4.93	3.65	2.88	0.542	1.01	0.838	
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0082
Potassium	6.7	2.4	10.2	2.1	2 U	2 U	
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	
Sodium	24.8	5.8	23.6	12.1	4.7	11.9	
Zinc	0.022	0.02 U	0.053	0.02 U	0.02 U	0.02 U	
Volatile Organic Compounds							
1,1,1-Trichloroethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,1,2,2-Tetrachloroethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,1,2-Trichloroethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,1-Dichloroethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,1-Dichloroethene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,2-Dibromoethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,2-Dichloroethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
1,2-Dichloropropane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
2-Butanone (MEK)	0.01 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	
2-Hexanone	0.01 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	
4-Methyl-2-pentanone	0.01 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	
Acetone	0.02 U	0.5 U	0.01 U	0.02 U	0.02 U	0.01 U	
Benzene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Bromodichloromethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Bromoform	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Bromomethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Carbon disulfide	0.01 U	0.25 U	0.01 U	0.01 U	0.01 U	0.01 U	
Carbon tetrachloride	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Chlorobenzene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005
Chloroethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Chloroform	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Chloromethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
cis-1,2-Dichloroethene	0.035	3	0.065	0.005 U	0.016	0.005 U	
cis-1,3-Dichloropropene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Dibromochloromethane	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Dichloromethane (Methylene chloride)	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.2
Ethyl benzene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
m&p-Xylene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
o-Xylene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Styrene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Tetrachloroethene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Toluene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	6
trans-1,2-Dichloroethene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
trans-1,3-Dichloropropene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	
Trichloroethene	0.005 U	0.13 U	0.005 U	0.005 U	0.005 U	0.005 U	0.04
Vinyl chloride	0.077	0.24	0.0071	0.005 U	0.005 U	0.005 U	
Wet Chemistry							
Nitrate Nitrogen	0.5 U	1 U	1 U	0.92	2.8	1 U	
Total Dissolved Solids	684	357	601	410	267	429	500

Note:
U - Concentration not detected at specified detection limit

Table 6-1

Fall 2012 Air Monitoring Results
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Point	Date	PID (ppm)	O_2 (%)	LEL (%)
V-1	8/31/2012	0.5	20.9	0
V-2	8/31/2012	2.1	20.1	36
V-3	8/31/2012	2.0	20.4	12
V-4	8/31/2012	12.9	20.1	31
V-5	8/31/2012	3.1	20.5	33
V-6	8/31/2012	5.3	20.9	0
V-7	8/31/2012	0.5	20.7	0
V-8	8/31/2012	20.4	19.0	> 100
V-9	8/31/2012	30.5	14.1	> 100
V-10	8/31/2012	0.5	20.9	0
V-11	8/31/2012	8.3	17.0	> 100
V-12	8/31/2012	0.5	20.7	0
V-13	8/31/2012	2.8	18.1	47
V-14	8/31/2012	2.4	19.9	23
V-15	8/31/2012	0.5	20.4	64
V-16	8/31/2012	3.5	20.4	47
V-17	8/31/2012	4.3	20.6	> 100
V-18	8/31/2012	7.1	17.2	0
V-19	8/31/2012	0.5	20.9	0
V-20	8/31/2012	0.5	20.7	0
V-21	8/31/2012	0.5	20.9	7
L-16[1]	8/31/2012	0.5	16.4	0
L-17[1]	8/31/2012	0.5	20.9	> 100
L-19	8/31/2012	16.7	0.8	> 100
L-21	8/31/2012	4.5	1.0	> 100
L-23	8/31/2012	4.8	0.8	> 100
L-25	8/31/2012	5.5	0.6	> 100
L-27	8/31/2012	2.5	0.4	> 100
L-29	8/31/2012	77.3	0.6	> 100
L-31	8/31/2012	142.7	4.4	> 100
MH-6	8/31/2012	0.5	13.0	> 100
MH-7	8/31/2012	4.9	6.4	> 100
MH-8	8/31/2012	0.5	19.2	32
MH-9	8/31/2012	2.6	19.4	18
MH-10	8/31/2012	0.5	19.8	20
MH-11	8/31/2012	0.5	19.8	26
MH-12	8/31/2012	0.5	20.5	0
MH-13	8/31/2012	12.3	9.4	> 100
MH-32	8/31/2012	12.3	20.5	0
MH-33	8/31/2012	2.2	20.1	0
Upwind	8/31/2012	0.5	20.9	0
Downwind-1	8/31/2012	0.5	20.9	0
Downwind-2	8/31/2012	0.5	20.9	0
Downwind-3	8/31/2012	0.5	20.9	0

Notes:
Meters: Rae Systems Multi-Rae Plus gas meter
Background Readings:
O_2 = 20.9 LEL = 0 PID = 0.5
Weather: Partly Cloudy 65-75F, 0-5 mph winds
Monitored By: M. Denhoff/K. Dye

Table 7-1

Summary of 2012 Residential Water Supply Sampling
Wellsville/Andover Landfill
Wellsville, New York

Location	Name	Water Source	Sampled March 2012	Sampled Sept 2012
WAL-2	Mr. Phil Rosini & Ms. Rosalie Rosini 210 East Linden Ave E. Rochester, NY 14445	Well[1,2] 105 ft.	NR	9/7/2012
WAL -5	Mr. Eugene Ormsby 4011 Duffy Hollow Road Wellsville, NY 14895	Spring[1,2]	NR	9/7/2012
WAL-19	Mr. Daniel & Mrs. Barbara LaDue 3914 Snyder Road Wellsville, NY 14895	Spring[1]	3/15/2012	9/6/2012

Notes:

[1] Water source information from Remedial Investigation Report, Wellsville/Andover Landfill Site, November 1993, prepared by Ecology & Environment

[2] Water source information from Phase II State Superfund Investigation Report, Wellsville/Andover Landfill Site, December 1986, prepared by Malcolm Pirnie

Table 7-2

2011 and 2012 Summary of Residential Water Supply Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2011 Detection Frequency	2011 Minimum	2011 Maximum	2012 Detection Frequency	2012 Minimum	2012 Maximum	NYSDOH MCL	2011 MCL Exceedances	2012 MCL Exceedances	Class GA Standard	2011 Class GA Exceendaces	2012 Class GA Exceendaces
Inorganic Compounds												
Arsenic	0/2			0/2			0.05	0	0	0.025	0	0
Barium	2/2	0.027	0.037	1/2	0.033	0.033	1	0	0	1	0	0
Cadmium	0/2			0/2			0.01	0	0	0.005	0	0
Calcium	2/2	31.3	49.1	2/2	24.4	48.2						
Chromium	0/2			0/2			0.05	0	0	0.05	0	0
Copper	1/2	0.058	0.058	1/2	0.039	0.039	1	0	0	0.2	0	0
Iron	1/2	1.88	1.88	1/2	1.13	1.13	0.3	1	1	0.3	1	1
Lead	0/2			0/2			0.05	0	0	0.025	0	0
Magnesium	2/2	14	17.4	2/2	10.7	16.2						
Manganese	1/2	0.909	0.909	1/2	0.875	0.875	0.3	1	1	0.3	1	1
Nickel	0/2			0/2						0.1	0	0
Potassium	1/2	2.3	2.3	0/2								
Selenium	0/2			0/2			0.01	0	0	0.01	0	0
Sodium	2/2	5.4	41.3	2/2	4.8	45.3				20	1	1
Zinc	1/2	0.025	0.025	0/2								
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	0/7			0/7			0.005	0	0	0.005	0	0
1,1,1-Trichloroethane	0/7			0/7			0.005	0	0	0.005	0	0
1,1,2,2-Tetrachloroethane	0/7			0/7			0.005	0	0	0.005	0	0
1,1,2-Trichloroethane	0/7			0/7			0.005	0	0	0.001	0	0
1,1-Dichloroethane	0/7			0/7			0.005	0	0	0.005	0	0
1,1-Dichloroethene	0/7			0/7			0.005	0	0	0.005	0	0
1,1-Dichloropropene	0/7			0/7								
1,2,3-Trichlorobenzene	0/7			0/7			0.005	0	0	0.005	0	0
1,2,3-Trichloropropane	0/7			0/7						0.00004	0	0
1,2,4-Trichlorobenzene	0/7			0/7			0.005	0	0	0.005	0	0
1,2,4-Trimethylbenzene	0/7			0/7			0.005	0	0	0.005	0	0
1,2-Dibromo-3-chloropropane	0/7			0/7						0.00004	0	0
1,2-Dibromoethane	0/7			0/7								
1,2-Dichlorobenzene	0/7			0/7			0.005	0	0	0.003	0	0
1,2-Dichloroethane	0/7			0/7						0.0006	0	0
1,2-Dichloropropane	0/7			0/7						0.001	0	0
1,3,5-Trimethylbenzene	0/7			0/7			0.005	0	0	0.005	0	0
1,3-Dichlorobenzene	0/7			0/7			0.005	0	0	0.003	0	0
1,3-Dichloropropane	0/7			0/7			0.005	0	0	0.005	0	0
1,4-Dichlorobenzene	0/7			0/7			0.005	0	0	0.003	0	0
2,2-Dichloropropane	0/7			0/7			0.005	0	0	0.005	0	0
2-Chlorotoluene	0/7			0/7			0.005	0	0	0.005	0	0
4-Chlorotoluene	0/7			0/7			0.005	0	0	0.005	0	0

Please see page 2 for notes.

Table 7-2

2011 and 2012 Summary of Residential Water Supply Detection Frequencies
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Parameter	2011 Detection Frequency	2011 Minimum	2011 Maximum	2012 Detection Frequency	2012 Minimum	2012 Maximum	NYSDOH MCL	2011 MCL Exceedances	2012 MCL Exceedances	Class GA Standard	2011 Class GA Exceendaces	2012 Class GA Exceendaces
VOC's Continued												
Benzene	0/7			0/7			0.005	0	0	0.001	0	0
Bromobenzene	0/7			0/7			0.005	0	0	0.005	0	0
Bromochloromethane	0/7			0/7			0.005	0	0	0.005	0	0
Bromodichloromethane	0/7			0/7								
Bromoform	0/7			0/7								
Bromomethane	0/7			0/7			0.005	0	0	0.005	0	0
Carbon tetrachloride	0/7			0/7			0.005	0	0	0.005	0	0
Chlorobenzene	0/7			0/7			0.005	0	0	0.005	0	0
Chloroethane	0/7			0/7			0.005	0	0	0.005	0	0
Chloroform	0/7			0/7			0.005	0	0	0.007	0	0
Chloromethane	0/7			0/7						0.005	0	0
cis-1,2-Dichloroethene	2/7	0.0025	0.0028	2/7	0.0026	0.0028				0.005	0	0
cis-1,3-Dichloropropene	0/7			0/7								
Dibromochloromethane	0/7			0/7								
Dibromomethane	0/7			0/7			0.005	0	0	0.005	0	0
Dichlorodifluoromethane	0/7			0/7			0.005	0	0	0.005	0	0
Dichloromethane (Methylene chloride)	0/7			0/7			0.005	0	0	0.005	0	0
Ethyl benzene	0/7			0/7			0.005	0	0	0.005	0	0
Hexachlorobutadiene	0/7			0/7						0.0005	0	0
Isopropylbenzene	0/7			0/7			0.005	0	0	0.005	0	0
m&p-Xylene	0/7			0/7								
Methyl tert-butyl ether (MTBE)	0/7			0/7								
n-Butylbenzene	0/7			0/7			0.005	0	0	0.005	0	0
n-Propylbenzene	0/7			0/7			0.005	0	0	0.005	0	0
Naphthalene	0/7			0/7								
o-Xylene	0/7			0/7								
p-Isopropyltoluene	0/7			0/7						0.005	0	0
sec-Butylbenzene	0/7			0/7						0.005	0	0
Styrene	0/7			0/7			0.005	0	0	0.005	0	0
Tert-Butyl Alcohol	0/7			0/7								
tert-Butylbenzene	0/7			0/7						0.005	0	0
Tetrachloroethene	0/7			0/7			0.005	0	0	0.005	0	0
Toluene	0/7			0/7			0.005	0	0	0.005	0	0
trans-1,2-Dichloroethene	0/7			0/7						0.005	0	0
trans-1,3-Dichloropropene	0/7			0/7								
Trichloroethene	2/7	0.0024	0.0028	2/7	0.0025	0.0028	0.005	0	0	0.005	0	0
Trichlorofluoromethane	0/7			0/7			0.005	0	0	0.005	0	0
Vinyl chloride	0/7			0/7			0.005	0	0	0.002	0	0

NYSDOH MCL - NYSDOH Maximum Contaminant Level

Class GA Standard - NYSDEC Class GA Groundwater Standard

Please see page 2 for notes.

Table 7-3

2012 Residential Water Supply Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mcg/L)

Parameter	WAL19PRE-0312 3/15/2012	WAL19INT-0312 3/15/2012	WAL19POST-0312 3/15/2012	WAL19PRE-0912 9/6/2012	WAL19INTER-0912 9/6/2012	WAL19POST-0912 9/6/2012	WAL2-0912 9/7/2012	WAL5-0912 9/7/2012
Inorganic Compounds								
Arsenic	NR	NR	NR	NR	NR	NR	0.01 U	0.01 U
Barium	NR	NR	NR	NR	NR	NR	0.033	0.02 U
Cadmium	NR	NR	NR	NR	NR	NR	0.005 U	0.005 U
Calcium	NR	NR	NR	NR	NR	NR	48.2	24.4
Chromium	NR	NR	NR	NR	NR	NR	0.01 U	0.01 U
Copper	NR	NR	NR	NR	NR	NR	0.02 U	0.039
Iron	NR	NR	NR	NR	NR	NR	1.13	0.1 U
Lead	NR	NR	NR	NR	NR	NR	0.05 U	0.05 U
Magnesium	NR	NR	NR	NR	NR	NR	16.2	10.7
Manganese	NR	NR	NR	NR	NR	NR	0.875	0.01 U
Nickel	NR	NR	NR	NR	NR	NR	0.04 U	0.04 U
Potassium	NR	NR	NR	NR	NR	NR	2 U	2 U
Selenium	NR	NR	NR	NR	NR	NR	0.01 U	0.01 U
Sodium	NR	NR	NR	NR	NR	NR	45.3	4.8
Zinc	NR	NR	NR	NR	NR	NR	0.02 U	0.02 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1,1-Trichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1,2,2-Tetrachloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1,2-Trichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1-Dichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1-Dichloroethene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,1-Dichloropropene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,3-Trichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,3-Trichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,4-Trichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2,4-Trimethylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dibromo-3-chloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dibromoethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dichloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,2-Dichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,3,5-Trimethylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,3-Dichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,3-Dichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
1,4-Dichlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
2,2-Dichloropropane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
2-Chlorotoluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
4-Chlorotoluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Benzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromochloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromodichloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromoform	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Bromomethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Carbon tetrachloride	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chlorobenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chloroethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chloroform	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Chloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
cis-1,2-Dichloroethene	0.0026	0.0005 U	0.0005 U	0.0028	0.0005 U	0.0005 U	NR	0.0005 U
cis-1,3-Dichloropropene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dibromochloromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dibromomethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dichlorodifluoromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Dichloromethane (Methylene chloride)	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Ethyl benzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U

Please see page 2 for notes.

Table 7-3

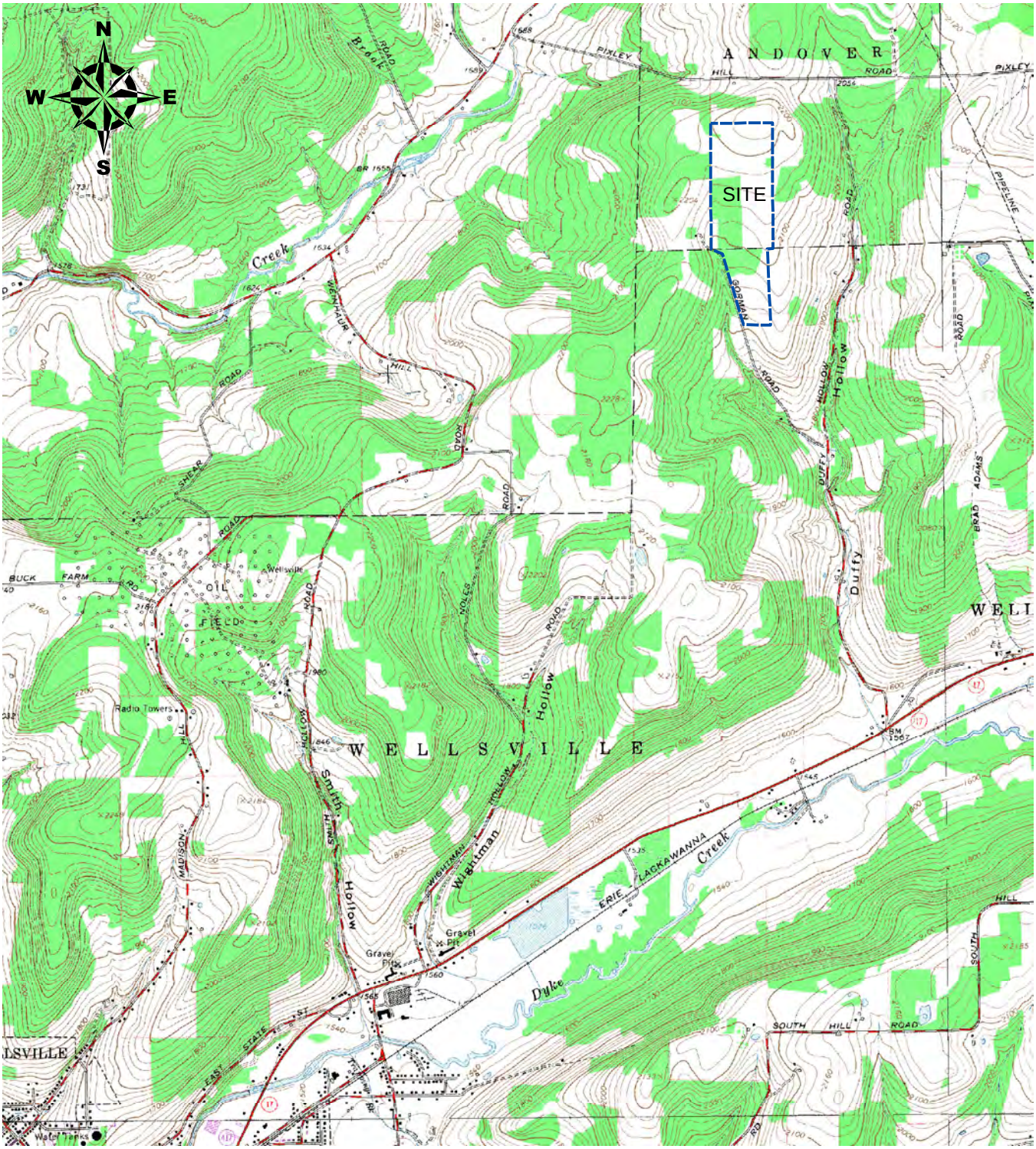
2012 Residential Water Supply Analytical Results
Wellsville/Andover Landfill
Wellsville, New York
(mcg/L)

Parameter	WAL19PRE-0312 3/15/2012	WAL19INT-0312 3/15/2012	WAL19POST-0312 3/15/2012	WAL19PRE-0912 9/6/2012	WAL19INTER-0912 9/6/2012	WAL19POST-0912 9/6/2012	WAL2-0912 9/7/2012	WAL5-0912 9/7/2012
VOC's Continued								
Hexachlorobutadiene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Isopropylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
m&p-Xylene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NR	0.001 U
Methyl tert-butyl ether (MTBE)	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
n-Butylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
n-Propylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Naphthalene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
o-Xylene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
p-Isopropyltoluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
sec-Butylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Styrene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Tert-Butyl Alcohol	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NR	0.02 U
tert-Butylbenzene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Tetrachloroethene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Toluene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
trans-1,2-Dichloroethene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
trans-1,3-Dichloropropene	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Trichloroethene	0.0025	0.0005 U	0.0005 U	0.0028	0.0005 U	0.0005 U	NR	0.0005 U
Trichlorofluoromethane	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U
Vinyl chloride	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	NR	0.0005 U

Notes:
U - Concentrations not detected at specified detection limit
NR - Not required

Please see page 2 for notes.

SITE LOCATION



SOURCE: WELLSVILLE NORTH, USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, DATED 1965.
NOTE: GORMAN ROAD IS NOW SYNDER ROAD.

3,000 1,500 0 3,000
Feet

1 inch = 3,000 feet

Legend

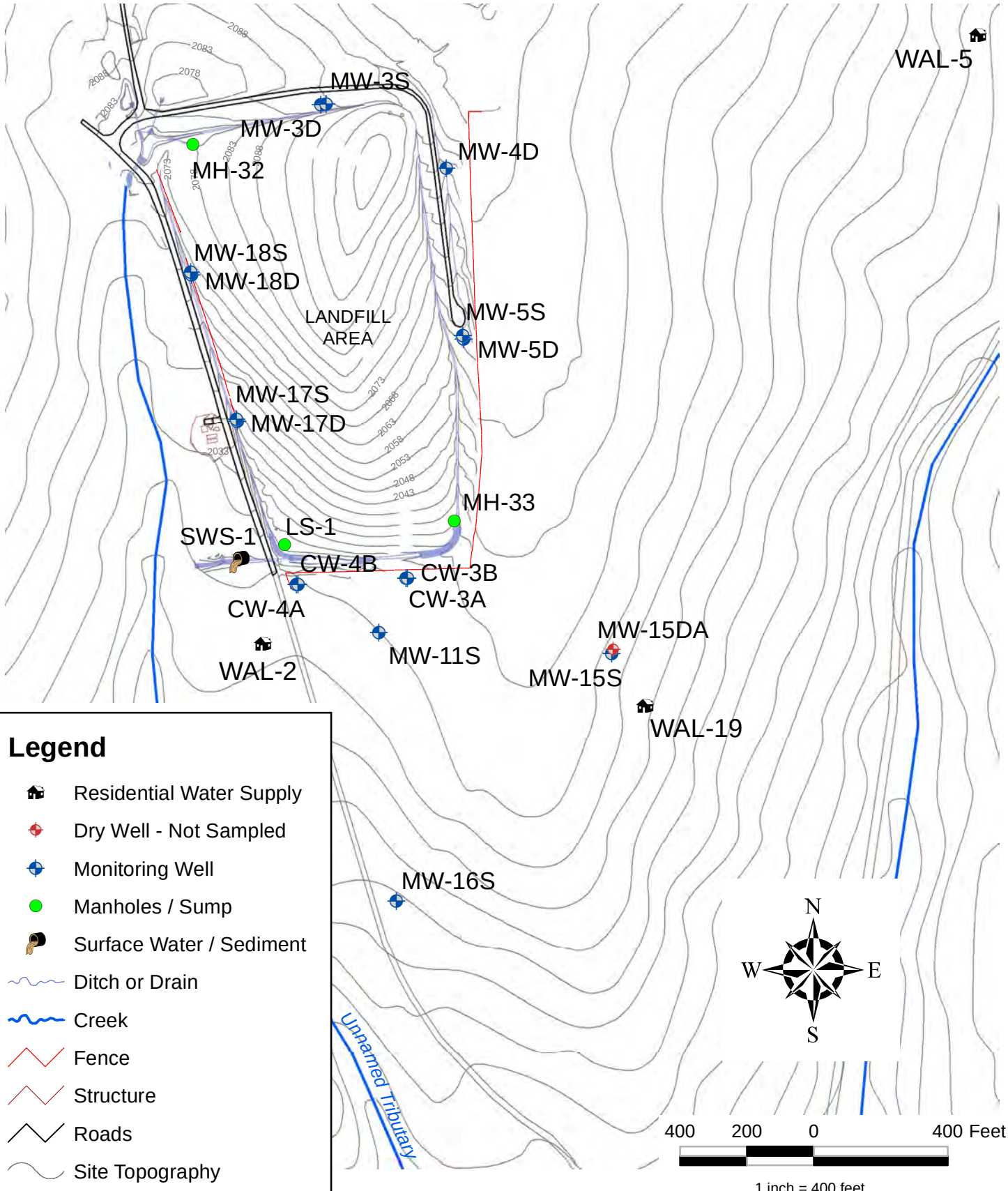
Approximate Site Boundary

ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Aveune Wellsville, NY14895

FIGURE NO.	1
PROJECT	WAL
DOCUMENT	2012 Annual Report
FILE NO.	Fig 1.mxd

N:\WAL\ANNUAL REPORTS\2012 ANNUAL REPORT\FIGURES\FIG 1.MXD

2012 SAMPLING LOCATIONS



Legend

- Residential Water Supply
- Dry Well - Not Sampled
- Monitoring Well
- Manholes / Sump
- Surface Water / Sediment
- Ditch or Drain
- Creek
- Fence
- Structure
- Roads
- Site Topography

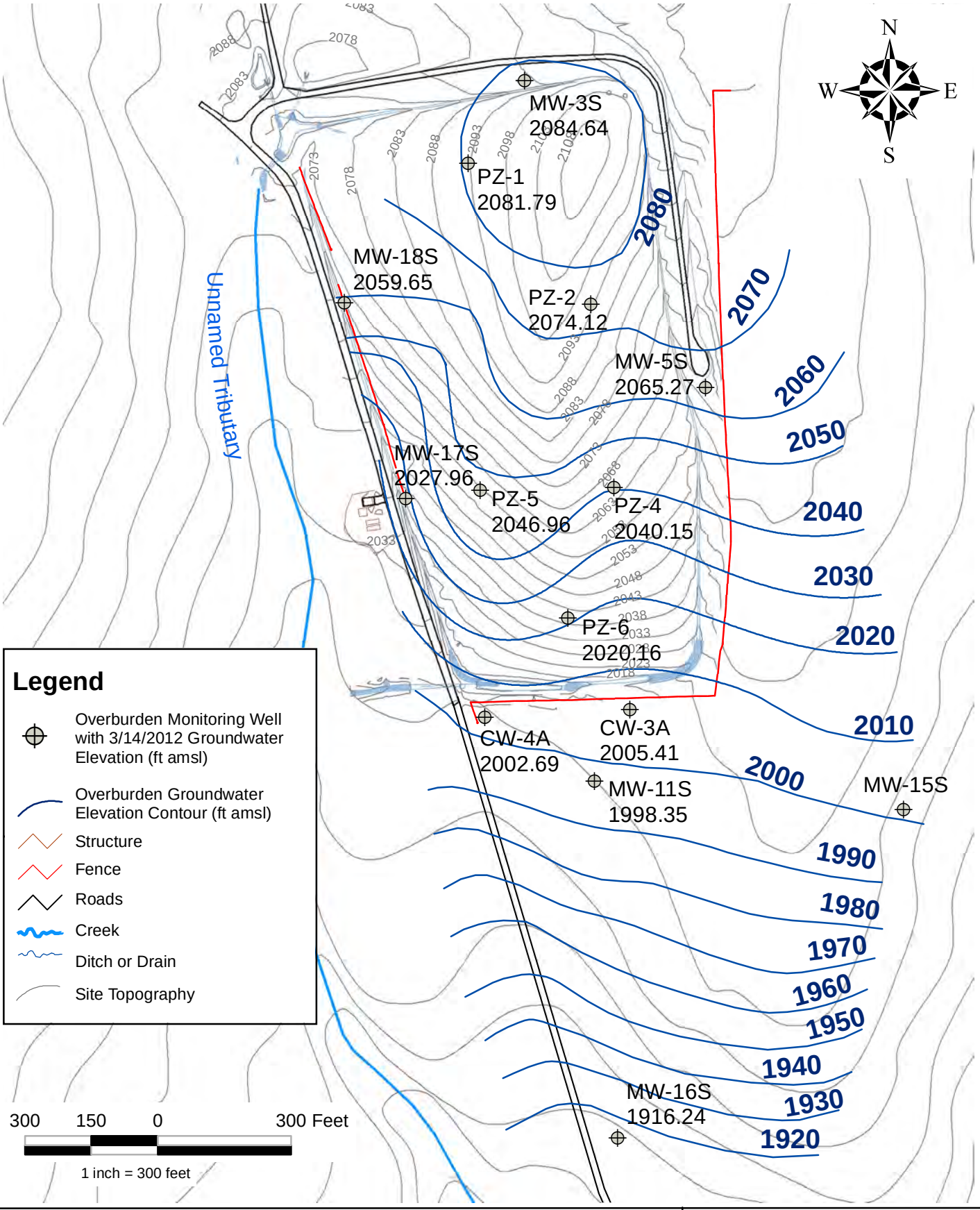
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	2
PROJECT	WAL
DOCUMENT	2012 Annual Report
FILE NO.	Fig 2.mxd

N:\WAL\ANNUAL REPORTS\2012 ANNUAL REPORT\FIGURES\FIG 2.MXD

MARCH 14, 2012 OVERBURDEN MONITORING WELL POTENTIOMETRIC MAP

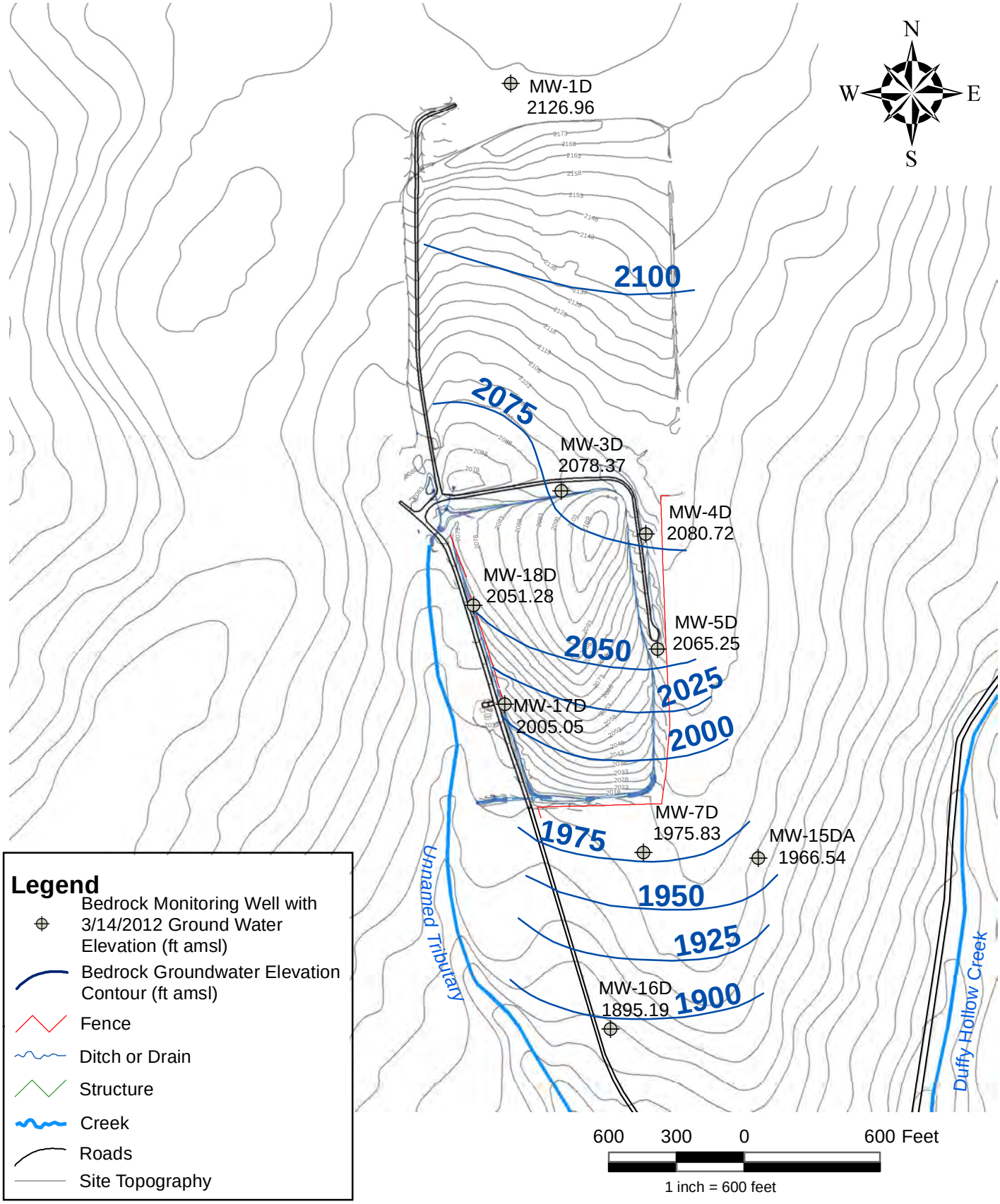


ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	3
PROJECT	WAL
DOCUMENT	2012 Annual Report
FILE NO	Fig 3 0312 OB.mxd

N:\WAL\ANNUALREPORTS\2012ANNUALREPORT\FIGURES\FIG 3 0312 OB.MXD

March 14, 2012 BEDROCK MONITORING WELL POTENTIOMETRIC MAP



Legend

- Bedrock Monitoring Well with 3/14/2012 Ground Water Elevation (ft amsl)
- Bedrock Groundwater Elevation Contour (ft amsl)
- Fence
- Ditch or Drain
- Structure
- Creek
- Roads
- Site Topography

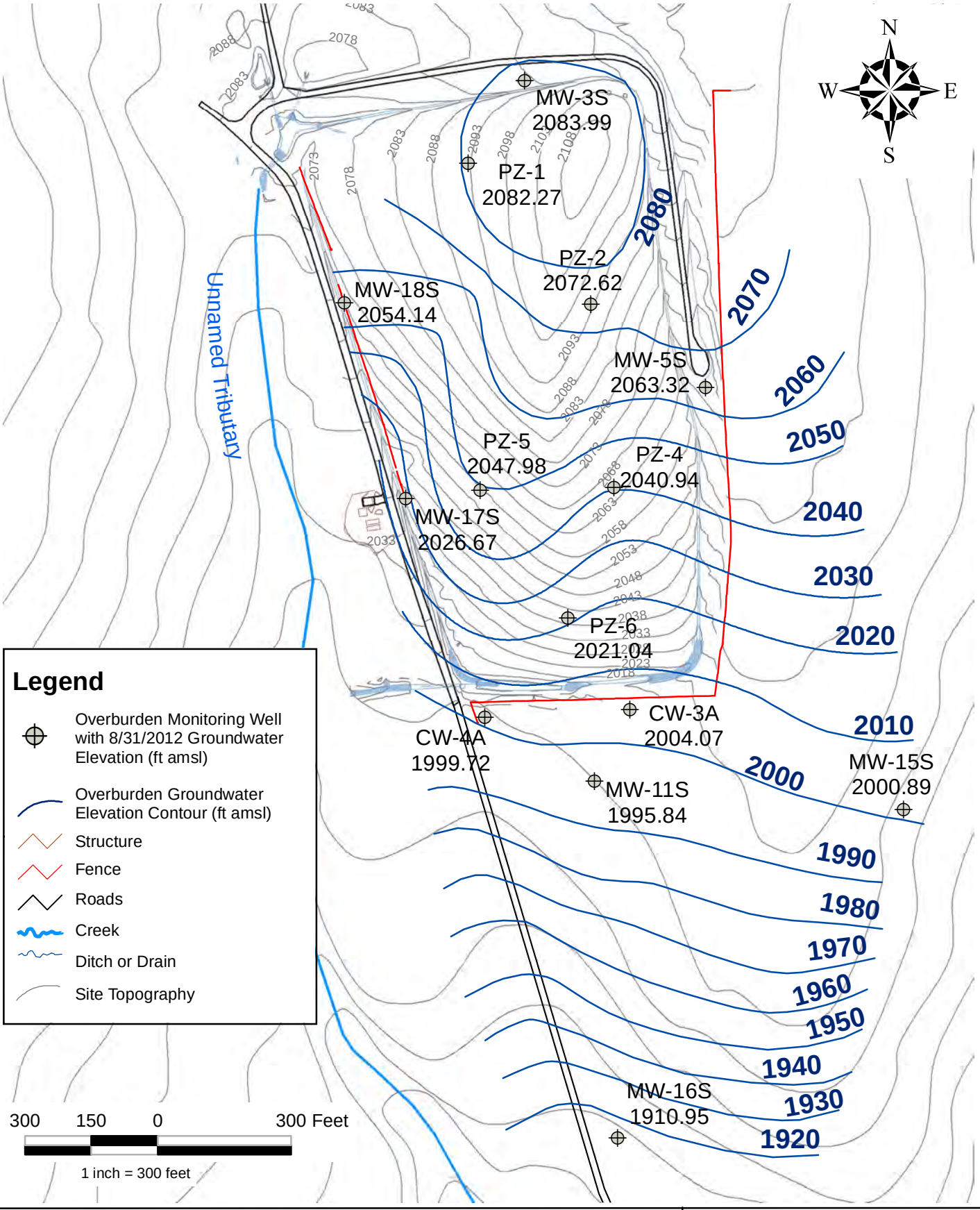
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	4
PROJECT	WAL
DOCUMENT	2012 Annual Report
FILE NO	Fig 4 0312 BR.mxd

N:\WAL\ANNUALREPORTS\2012ANNUALREPORT\FIGURES\FIG 4 0312 BR.MXD

AUGUST 31, 2012 OVERBURDEN MONITORING WELL POTENTIOMETRIC MAP

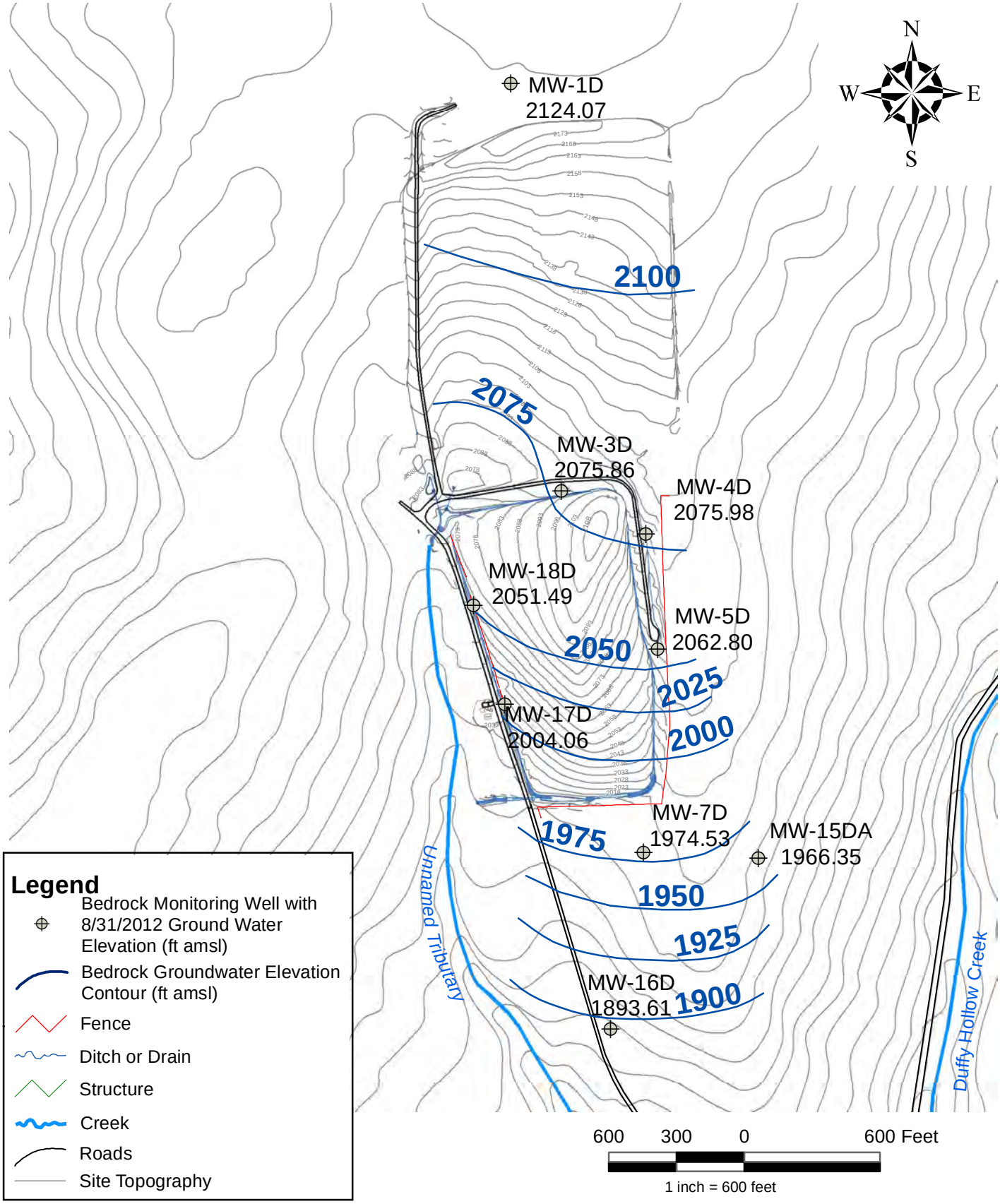


ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	5
PROJECT	WAL
DOCUMENT	2012 Annual Report
FILE NO	Fig 5 0812 OB.mxd

N:\WAL\ANNUALREPORTS\2012ANNUALREPORT\FIGURES\FIG 5 0812 OB.MXD

AUGUST 31, 2012 BEDROCK MONITORING WELL POTENTIOMETRIC MAP



Legend

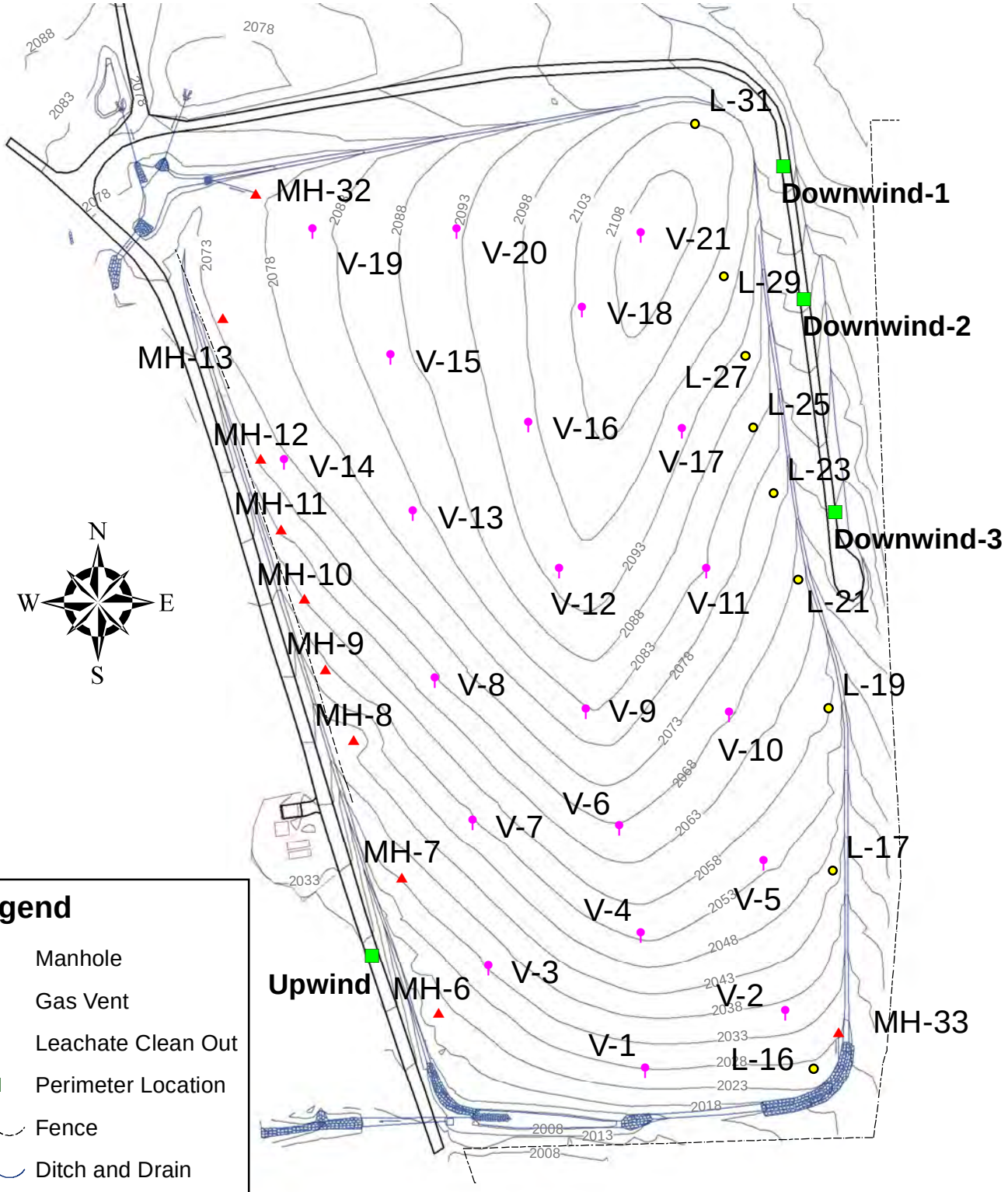
- Bedrock Monitoring Well with 8/31/2012 Ground Water Elevation (ft amsl)
- Bedrock Groundwater Elevation Contour (ft amsl)
- Fence
- Ditch or Drain
- Structure
- Creek
- Roads
- Site Topography

ON-SITE TECHNICAL SERVICES, INC.
72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	6
PROJECT	WAL
DOCUMENT	2012 Annual Report
FILE NO	Fig 6 0812 BR.mxd

N:\WAL\ANNUALREPORTS\2012ANNUALREPORT\FIGURES\FIG 6 0812 BR.MXD

AUGUST 31, 2012 AIR MONITORING LOCATIONS



Legend

- Manhole
- Gas Vent
- Leachate Clean Out
- Perimeter Location
- Fence
- Ditch and Drain
- Structure
- Road
- Site Topography

200 100 0 200 Feet

1 inch = 200 feet

ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	7
PROJECT	WAL
DOCUMENT	2012 ANNUAL RPT
FILE NO.	FIG 7.MXD

N:\WAL\ANNUALREPORTS\2012ANNUALREPORT\FIGURES\FIG 7.MXD

New York State Department of Environmental Conservation
Division of Environmental Remediation, 11th Floor
625 Broadway, Albany, New York 12233
Phone: (518) 402-9553 **Fax:** (518) 402-9577
Website: www.dec.ny.gov

Joe Martens
Commissioner

3/22/2013

William D. Whitfield
Director of Public Works
Village of Wellsville
200 Bolivar Road
Wellsville, NY 14895

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal
Site Name: Wellsville-Andover Landfill
Site No.: 902004
Site Address: Snyder Hill Road
Wellsville, NY 14895

Dear William D. Whitfield:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at http://www.dec.ny.gov/regulations/67386.html) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **May 13, 2013.** Guidance on the content of a PRR is enclosed.

Site Management is defined in regulation (6 NYCRR 375-1.2(at)) and in Chapter 6 of DER-10. Depending on when the remedial program for your site was completed, SM may be governed by multiple documents (e.g., Operation, Maintenance, and Monitoring Plan; Soil Management Plan) or one comprehensive Site Management Plan.

A Site Management Plan (SMP) may contain one or all of the following elements, as applicable to the site: a plan to maintain institutional controls and/or engineering controls ("IC/EC Plan"); a plan for monitoring the performance and effectiveness of the selected remedy ("Monitoring Plan"); and/or a plan for the operation and maintenance of the selected remedy ("O&M Plan"). Additionally, the technical requirements for SM are stated in the decision document (e.g., Record of Decision) and, in some cases, the legal agreement directing the remediation of the site (e.g., order on consent, voluntary agreement, etc.).

When you submit the PRR (by the due date above), include the enclosed forms documenting that all SM requirements are being met. The Institutional Controls (ICs) portion of the form (Box 6) must be signed by you or your designated representative. The Engineering Controls (ECs) portion of the form (Box 7) must be signed by a Qualified Environmental Professional (QEP). If you cannot certify that all SM requirements are being met, you must submit a Corrective Measures Work Plan that identifies the actions to be taken to restore compliance. The work plan must include a schedule to be approved by the Department. The Periodic Review process will not be considered complete until all necessary corrective measures are completed and all required controls are certified. Instructions for completing the certifications are enclosed.

All site-related documents and data, including the PRR, are to be submitted in electronic format to the Department of Environmental Conservation. The Department will not approve the PRR unless all documents and data generated in support of that report have been submitted in accordance with the electronic submissions protocol. In addition, the certification forms are required to be submitted in both paper and electronic formats.

Information on the format of the data submissions can be found at:
http://www.dec.ny.gov/regulations/2586.html

The signed certification forms should be sent to David Szymanski, Project Manager, at the following address:

New York State Department of Environmental Conservation
270 Michigan Ave
Buffalo, NY 14203-2915

Phone number: 716-851-7220. E-mail: dsszyman@gw.dec.state.ny.us

The contact information above is also provided so that you may notify the project manager about upcoming inspections, or for any other questions or concerns that may arise in regard to the site.

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

ec: w/ enclosures
David Szymanski, Project Manager
Marty Doster, Hazardous Waste Remediation Engineer, Region 9
Krista Anders, DOH

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1.1.1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the Certification cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this Certification form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7):

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.
- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2

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. 902004

Site Name Wellsville-Andover Landfill

Site Address: Snyder Hill Road Zip Code: 14895
City/Town: Wellsville
County: Allegany
Site Acreage: 19.0

Reporting Period: February 15, 2012 to February 15, 2013

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☐

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Closed Landfill	☒	☐
7. Are all ICs/ECs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

SITE NO. 902004

Box 3

Description of Institutional Controls

Parcel	Owner	Institutional Control
201-1-15.2	VILLAGE OF WELLSVILLE	Ground Water Use Restriction Monitoring Plan O&M Plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
201-1-15.2	Cover System Fencing/Access Control Leachate Collection

Per Site O&M Manual (11/01/1997), Environmental Control Systems:
- Cover System.
- Leachate Collection and Storage System.
- Gas Venting System.
- Storm Water System.
- Groundwater Monitoring System; and
- Facility Access System (i.e., Access Roads and gates.

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
☒	☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 902004

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 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 William Whitfield (print name) at 200 Bolivar Road Wellsville, NY (print business address)

am certifying as Owner (Owner or Remedial Party)

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

Signature of Owner, Remedial Party, or Designated Representative Rendering Certification

Date 5/2/13

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional 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 Jonathan Brandes (print name) at 72 Railroad Avenue Wellsville, NY (print business address),

am certifying as a Qualified Environmental Professional for the Owner (Owner or Remedial Party)

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

5/2/13
Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated the ability of each component of the remedy subject to O&M requirements to perform as

designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
   1. whether all requirements of each plan were met during the reporting period
   2. any requirements not met
   3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals
   1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
   2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

ON-SITE TECHNICAL SERVICES, INC
72 Railroad Avenue
Wellsville, New York 14895
Phone: (585) 593-1824
Fax: (585) 593-7471

April 3, 2009

Linda Ross, CPG
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: Wellsville/Andover Landfill Site (Site # 9-02-004) – Site Monitoring Evaluation and Proposed Revised Monitoring Plan

Dear Linda:

On behalf of the Village of Wellsville, this letter has been prepared to evaluate the above referenced site's post remedial action monitoring results and propose a revised monitoring plan tailored to the site for continued ample monitoring.

Background

The Wellsville/Andover Landfill was operated by the Village of Wellsville from 1964 to 1983, accepting both municipal and industrial waste. The site was added to the New York State Superfund and the New York State Department of Environmental Conservation (NYSDEC) selected capping with waste consolidation as the remedial action in the Record of Decision (ROD) for the site (NYSDEC 1994). Waste from the Northwest and Northeast fill areas was consolidated and capped on the South/South-central fill area. Following consolidation, the fill was compacted and capped with a 19-acre cover system, which incorporates a passive landfill gas (LFG) venting system, a leachate collection and storage system and a groundwater cut-off trench. Remedial construction activities were completed in September 1997.

An operation and maintenance plan was prepared for the site: *Operation and Maintenance Manual For The Wellsville/Andover Landfill Site Number 9-02-004 Allegany County, New York,* dated November 1997 (O&M Plan); which details O&M requirements. Section 3.3 of the O&M Plan states:

The primary goals of this action were to minimize leachate production, control and manage leachate produced, control LFG, consolidate the waste to reduce the size of the landfill, reduce the potential for

surface contact with waste and contaminated soils, and mitigate the spread of contaminated groundwater off site. The remedial action mitigated significant threats to the public health and the environment by:

- *Reducing the production of leachate within the fill mass;*
- *Eliminating the threat to surface waters by eliminating any future contaminated surface water runoff from the contaminated soils on site;*
- *Eliminating the potential for direct human or animal contact with the contaminated soils on site;*
- *Mitigate the impacts of contaminated groundwater to the environment;*
- *Mitigating, to the extent practicable, migration of contaminates in the landfill to groundwater; and*
- *Controlling LFG.*

Site Hydrogeology

Groundwater hydrogeology was investigated during the remedial investigation as summarized in the O&M Plan. Generally, groundwater flows from the North-Northeast to the South-Southwest as dictated primarily by topography. The overburden and bedrock beneath the site have been interpreted as being one continuous aquifer with no separating confining layer. However, in some areas of the site discontinuous low permeability horizons of silt and clay are present within the overburden creating perched water bearing zones. Groundwater flow is restricted vertically by localized clay/silt lenses, but aided in other areas by sand and gravel zones. In the top of bedrock, groundwater flow appears to be controlled by fractures and joints. Open and clay-filled bedrock fractures with many orientations were observed from remedial investigation borings. This indicates that groundwater can flow both horizontally and vertically within the overburden and top of bedrock.

Potentiometric mapping as part of approximately 11 years of post remediation monitoring indicate that groundwater flow conditions and directions have shown little variations from that observed during the remedial investigation.

Evaluation of Monitoring Results

Post remedial action site monitoring commenced in June 1998 and was conducted quarterly through 1999. Starting in 2000 and continuing through 2008, site monitoring has been conducted semi-annually. The monitoring has included sampling and analysis of groundwater, surface water and sediment, groundwater collection system water and leachate. These samples are tested for field parameters, Volatile Organic Compounds (VOCs), 15 Metals and 14 wet chemistry compounds listed in the table below.

Field Parameters
Specific Conductance
Temperature
pH
Oxygen Reduction Potential
Dissolved Oxygen
Turbidity

Inorganic Compounds
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Nickel
Potassium
Selenium
Sodium
Zinc

Volatile Organic Compounds
1,1,1-Trichloroethane
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
2-Butanone (MEK)
2-Hexanone
4-Methyl-2-pentanone
Acetone
Benzene
Bromodichloromethane
Bromoform
Bromomethane
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane
Chloroform
Chloromethane
cis-1,2-Dichloroethene
cis-1,3-Dichloropropene
Dibromochloromethane
Dichloromethane (Methylene chloride)
Ethyl benzene
m&p-Xylene
o-Xylene
Styrene
Tetrachloroethene
Toluene
trans-1,2-Dichloroethene
trans-1,3-Dichloropropene
Trichloroethene
Vinyl chloride

Wet Chemistry
Alkalinity
Ammonia
Biochemical Oxygen Demand
Bromide
Chemical Oxygen Demand
Chloride
Color (True)
Hardness
Sulfate
Total Dissolved Solids
Total Kjeldahl Nitrogen
Total Organic Carbon (TOC)
Total Phenolics
Turbidity

Additionally potentiometric mapping, landfill gas monitoring and sampling and analysis of nearby residential water supplies is conducted. An evaluation of these approximately 11 years of monitoring results is presented below.

Groundwater

The current site monitoring well network consists of 18 wells required to be sampled annually and 11 of the 18 wells sampled semi-annually. Please see attached figure 1 for monitoring well locations. The table below presents a summary of parameters detected in groundwater during the last five years of monitoring.

Summary of 2004 through 2008 Groundwater Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection	Class GA Standard	Number of Class GA Exceedances
Metals						
Barium	119	98	0.0202	0.32	1	0
Calcium	119	119	2.96	140		
Chromium	119	1	0.011	0.011	0.05	0
Iron	119	97	0.108	13.4	0.3	77
Lead	119	8	0.0052	0.0733	0.025	1
Magnesium	119	118	0.651	64		
Manganese	119	112	0.0102	1.65	0.3	58
Potassium	119	85	2.1	33.5		
Selenium	119	1	0.00522	0.00522	0.01	0
Sodium	119	119	1.56	67.4	20	45
Zinc	119	21	0.0205	0.347		0
VOCs						
1,1-Dichloroethene	134	1	0.0066	0.0066	0.005	1
cis-1,2-Dichloroethene	134	94	0.005	3	0.005	93
Ethyl benzene	134	1	0.0073	0.0073	0.005	1
Toluene	134	1	0.0065	0.0065	0.005	1
trans-1,2-Dichloroethene	134	4	0.011	0.021	0.005	4
Trichloroethene	134	80	0.0052	3.2	0.005	80
Vinyl chloride	134	34	0.005	0.83	0.002	34
Wet Chemistry						
Alkalinity	113	113	7.2	410		
Ammonia Nitrogen	115	11	0.0512	0.161	2	0
Biochemical Oxygen Demand	111	15	2.13	13		
Bromide	113	6	1.06	1.38		
Chemical Oxygen Demand	115	40	5.13	18.8		
Chloride	113	89	2.04	71.4	250	0
Color (True) (C.U.)	116	70	5	75	15	10
Hardness	117	117	12.2	519		
Sulfate	113	113	3.49	161	250	0
Total Dissolved Solids	113	113	32	698	500	5
Total Kjeldahl Nitrogen	115	34	0.203	2.74		
Total Organic Carbon (TOC)	115	70	1.01	7.51		
Total Phenolics	114	2	0.00706	0.0181	0.001	2

As observed in the table above and also previously described in site monitoring reports, there are three metals (Iron, Manganese and Sodium) and three VOCs (cis-1,2-Dichloroethene (cDCE), Trichloroethene (TCE) and Vinyl chloride) that frequently exceed NYSDEC Class GA Groundwater Standards. Therefore, concentration verses time plots for these six compounds have been prepared for monitoring wells that exhibit exceedances. These wells include CW-3A, CW-3B, CW-4B, MW-5D, MW-5S, MW-15S and MW-18S for metals and VOCs and MW-11S and MW-16S for VOCs. These plots are attached for reference.

In General, for Iron, Manganese and Sodium, increasing or decreasing time trends are not apparent. The three metals have been detected at various concentrations above standards at both upgradient and downgradient wells. These metals are common constituents of soil and groundwater and often occur naturally at the concentrations detected.

Volatile Organic Compound analyses of groundwater have shown evident time trends and VOCs are the primary constituents of concern at this site. For this reason statistical analysis was performed to evaluate total VOCs (sum of detected VOCs in a given sample). The data set utilized for the analysis includes all available post remediation VOC results, which generally includes 24 sampling events over an 11 year period. The statistical analysis was conducted using the Mann-Kendall test using a normal approximation method in accordance with *USEPA Data Quality Assessment: Statistical Methods for Practitioners EPA QA/G-9S*, dated February 2006. In this analysis, a null hypothesis of "There is no trend" is tested against an alternative hypothesis of either "There is an upward trend" or "There is a downward trend". This analysis involves using a triangular table to compute a Statistic (S) and test it against a critical value and a probability value at a 5 % significance level (95% confidence level). If both criteria are met, then the null hypothesis of no trend is rejected in favor of the alternative hypothesis. Rejecting the null hypothesis suggests that the alternative hypothesis may be true. Alternative hypotheses are upward trend for S greater than zero and downward trend for S less than zero. If only one criterion or neither criteria are met, then the result is not enough evidence to show a trend. These statistical analyses are presented in Table 1 attached. A discussion of time trend plots and statistical analysis by individual monitoring well is provided below.

CW-3A – This is an overburden well located immediately downgradient of the landfill.

Plot observation: This well exhibited anomalous high results in June 2005, but has returned to lower levels the last seven samplings. TCE and cDCE have shown a decreasing trend the last three samplings, while vinyl chloride has been non-detect except in June 2005.

Statistical analysis: There is strong evidence of an upward trend in total VOC concentrations.

CW-3B – This is an overburden well located immediately downgradient of the landfill and adjacent to CW-3A. This well is approximately 12.5 feet deeper than CW-3A.

Plot observation: There is an apparent slight increasing trend in concentrations of TCE and cDCE.

Statistical analysis: There is strong evidence of an upward trend in total VOC concentrations.

CW-4B – This is an overburden well located immediately downgradient of the landfill.

Plot observation: The plot shows a slight downward trend with TCE and Vinyl chloride results non-detect the last five years and cDCE has been non-detect since December 2005.

Statistical Analysis: There is evidence of a downward trend, but not statistically significant at the 5% significance level (95% confidence level). Therefore, the result of the statistics is no trend.

MW-4D – This is a bedrock well located cross-gradient and East of the Northern portion of the landfill.

Plot observation: This well exhibits an apparent seasonal fluctuation in VOCs with an inverse proportional relationship to groundwater elevation. Elevated concentrations of primarily cDCE occur in the fall when groundwater elevations are low and then decrease in the spring when groundwater elevations are high. However, this seasonal fluctuation is not represented in the graph for the period of 2003 to 2007 when semi-annual sampling was conducted in the months of June and December and did not include samplings at low groundwater elevation periods. This period may have included times of elevated cDCE, but this is unknown because sampling was not conducted during periods of low groundwater levels.

Statistical Analysis: There is evidence of a downward trend, but not statistically significant at the 5% significance level (95% confidence level). Therefore, the result of the statistics is no trend.

MW-5S – This is an overburden well located cross-gradient and East of the central portion of the landfill.

Plot observation: There is a decreasing trend apparent from 1998 to 2002 and concentrations have remained low and relatively stable since 2002.

Statistical analysis: There is evidence of a downward trend, but not statistically significant at the 5% significance level (95% confidence level). Therefore, the result of the statistics is no trend.

MW-5D – This is a bedrock well located immediately adjacent to MW-5S.

Plot observations: cDCE is observed at higher concentrations than TCE and Vinyl chloride, but there is not an apparent increasing or decreasing trend.

Statistical analysis: There is no trend.

MW-11S – This is an overburden well located approximately 230 feet downgradient of the landfill and has been sampled semi-annually since 2005.

Plot observation: The plot shows fairly consistent VOC concentrations over time. TCE is the highest concentration (approximately 3 mg/L), cDCE is consistently around 0.5 mg/L and Vinyl chloride has been non-detect.

Statistical analysis: There is no trend.

MW-15S – This is an overburden well located cross/downgradient and approximately 600 feet from the landfill.

Plot observation: There is no discernable upward or downward trend. cDCE has been detected at concentrations between 0.011 mg/L and 0.04 mg/L, TCE fluctuates between

approximately 0.5 mg/L and non-detect and Vinyl chloride has been non-detect since 2002. However, this well does appear to exhibit seasonal fluctuations in VOC concentrations similar to MW-4D.

Statistical analysis: There is no trend.

MW-16S – This is an overburden well located approximately 1000 feet downgradient of the landfill. This well has been sampled on the same frequency as MW-11S.

Plot observation: cDCE, TCE and Vinyl chloride results are below detection limits, with the exception of TCE at 0.066 mg/L in September 2006.

Statistical analysis: Since there is only one VOC detection at this well; statistical analysis is not applicable.

MW-18S - This is an overburden well located cross-gradient and West of the northern portion of the landfill.

Plot observation: A time trend is not obvious, but there is a good correlation between cDCE and TCE, while Vinyl chloride has not been detected. cDCE and TCE concentrations increased in 2000 as compared to 1998 through 1999 and remained at similar concentration through 2007.

Statistical analysis: There is evidence of an upward trend. However, it should be noted that both criteria thresholds were just slightly exceeded, indicating that there is just enough evidence to reject no trend in favor of an upward trend.

Surface Water and Sediment

Surface water and sediment samples have been collected annually since 2000 from location SWS-1 (see figure 1). Prior to spring 2000 surface water and sediment samples were collected quarterly from SWS-1 and two other down stream locations. Additionally, three landfill perimeter seep samples were collected between 2001 and 2003. Seeps have not been observed active since 2003. SWS-1 is the currently required surface water and sediment sampling location; therefore results from this location are discussed below.

Location SWS-1 is located at the downstream side of the culvert within the drainage ditch that leads to an unnamed tributary to Duffy Hollow Creek. Both the unnamed tributary and Duffy Hollow Creek are classified as NYSDEC Class C streams. Since June 1998, 15 surface water samples have been collected at SWS-1. From these 15 samples, four samples have exhibited Class C surface water exceedances as presented in the table below.

SWS-1 Surface Water Class C Exceedances (mg/L)

Parameter	SWS-1 6/25/1998	SWS-1 12/2/1998	SWS-1 3/25/1999	SWS-1 6/16/2005	Class C Standard
Lead	0.0088		0.0089		0.008
Nickel			0.0176 B		0.0082
Thallium		0.0127			0.008
Total Dissolved Solids				642	500

VOCs have not been detected at SWS-1 with the following exceptions. There were three Acetone detections between 1998 and 1999, which are probable laboratory artifacts. cDCE was detected five times at a maximum concentration of 0.0067 mg/L. The last cDCE detection was reported in April 2003.

Sediment sampling at SWS-1 has shown typical metal and wet chemistry parameter detections along with minimal VOC detections. A summary of SWS-1 sediment detections is presented in the table below.

SWS-1 Sediment Analytical Result Summary (mg/Kg)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
Aluminum	7	7	8780	13100
Arsenic	15	15	7.16	73.4
Barium	15	15	51.2	348
Beryllium	7	5	0.628	0.876
Boron	7	2	27.1	41.1
Cadmium	15	2	0.18	1.14
Calcium	15	15	3850	43200
Chromium	15	15	7.26	21.2
Cobalt	7	7	9.9	17.4
Copper	15	15	10.2	25.5
Iron	15	15	11800	41200
Lead	15	15	6.22	30
Magnesium	15	15	1780	8490
Manganese	15	15	579	8160
Mercury	7	1	0.01	0.01
Nickel	15	15	10.3	32.3
Potassium	15	15	862	4600
Selenium	15	6	1.3	13.1
Sodium	15	12	81.9	1390
Thallium	7	1	3.21	3.21
Vanadium	7	7	11.2	23.4
Zinc	14	14	74.3	2610
1,1,2-Trichloroethane	15	1	0.012	0.012
1,2-Dichloroethane	15	1	0.012	0.012
2-Butanone (MEK)	15	2	0.004	0.033
Acetone	15	5	0.016	0.22
Chloromethane	15	1	0.004	0.004
Toluene	15	2	0.0027	0.071

SWS-1 Sediment Analytical Result Summary (mg/Kg)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
Alkalinity	15	14	376	14300
Ammonia Nitrogen	15	11	8.12	339
Biochemical Oxygen Demand	14	13	203	49500
Bromide	15	1	13.1	13.1
Chemical Oxygen Demand	15	15	15600	535000
Chloride	15	4	41.8	144
Hardness	14	13	689	44300
Sulfate	15	4	39.3	1700
Total Kjeldahl Nitrogen	15	15	168	5790
Total Organic Carbon (TOC)	10	10	0.34	46700
Total Phenolics	15	1	0.447	0.447
Total Solids	14	14	14.1	82.6

Groundwater Cut-off System

The groundwater cut-off system is intended to capture upgradient groundwater from the North and East landfill perimeters prior to contacting waste within the landfill. The North side collection trench drains to Manhole MH-32 located at the Northwest corner of the landfill, while the East side collection trench drains to Manhole MH-33 at the Southeast corner of the landfill. Both MH-32 and MH-33 are piped to drain either to the leachate collection system or to the landfill perimeter surface water drainage channels. To date, water in MH-32 and MH-33 has been drained to the leachate collection system. The pipes from the manholes to the drainage channel are closed with removable plugs. Sampling of these two manholes has been conducted since 1998 in anticipation of demonstrating acceptable water quality for discharge to the surface water drainage channels. A summary of parameters exceeding Class C surface water standards is provided below.

MH-32 & MH-33 Groundwater Cut-off System Class C Surface Water Exceedance Summary (mg/L)

Parameter	Number of Sample	Number of Detections	Minimum Detection	Maximum Detection	Class C Standard	Number of Class C Exceedances
Cobalt	12	4	0.0056	0.154	0.005	4
Lead	46	11	0.0027	0.165	0.008	7
Nickel	46	4	0.0056	0.272	0.0082	3
Thallium	12	3	0.0055	0.0178	0.008	2
Vanadium	12	4	0.0043	0.0826	0.014	2
Dichloromethane (Methylene chloride)	42	9	0.0027	1.9	0.2	1
Trichloroethene	42	20	0.0011	1.6	0.04	6
Ammonia Nitrogen	42	41	0.0955	7.69	2	12
Total Dissolved Solids	42	42	203	1650	500	16

Additionally, since cDCE, TCE and Vinyl chloride are the three primary constituents of concern in groundwater; time trend plots of these three compounds were created for MH-32 and MH-33 and are attached. MH-32, and to a greater extent MH-33, show a decreasing trend in these VOCs. However, at this time groundwater cut-off trench water does not meet standards to allow discharge to surface water.

Leachate

The quantity of leachate generated at the site has greatly decreased following the remedial action (please see attached graph). Leachate is sampled from the leachate sump. Since the groundwater cut-off system has drained to the leachate sump to date, leachate samples are a composite from the leachate collection system and groundwater cut-off trench. Various metals, VOCs and wet chemistry parameters are typically detected as presented in the summary table below.

Summary of Leachate Sump Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
Aluminum	5	4	0.164	8.76
Arsenic	21	12	0.0051	0.238
Barium	21	21	0.112	0.961
Boron	4	3	0.163	0.659
Cadmium	21	1	0.00572	0.00572
Calcium	21	21	78.7	151
Chromium	21	4	0.0101	0.0205
Cobalt	4	1	0.0034	0.0034
Copper	21	4	0.0043	0.0392
Iron	21	21	3.22	360
Lead	21	10	0.0043	0.0738
Magnesium	21	21	25.1	62.2
Manganese	21	21	3.72	13.7
Nickel	21	1	0.0054	0.0054
Potassium	21	21	3.57	16.9
Selenium	21	3	0.005	0.00981
Sodium	21	21	14.6	112
Tin	3	1	0.198	0.198
Vanadium	4	1	0.0632	0.0632
Zinc	18	11	0.0159	0.21
1,1-Dichloroethane	21	2	0.0014	0.0022
2-Butanone (MEK)	21	2	0.031	0.05
4-Methyl-2-pentanone	21	1	0.0049	0.0049
Acetone	21	5	0.0056	0.044
Benzene	21	2	0.0022	0.0044
Chlorobenzene	21	1	0.0019	0.0019
Chloroethane	21	1	0.0027	0.0027
Chloroform	21	2	0.0018	0.0034
cis-1,2-Dichloroethene	21	21	0.011	0.95
Dichloromethane (Methylene	21	2	0.0023	0.067

Summary of Leachate Sump Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection
chloride)				
Ethyl benzene	21	6	0.005	0.1
m&p-Xylene	21	1	0.0075	0.0075
o-Xylene	21	1	0.0038	0.0038
Phenol	5	1	0.044	0.044
Toluene	21	4	0.0022	0.026
trans-1,2-Dichloroethene	21	4	0.0026	0.0075
Trichloroethene	21	14	0.0064	0.038
Vinyl chloride	21	16	0.0029	0.05
Alkalinity	19	19	276	566
Ammonia Nitrogen	19	19	0.0873	12.1
Biochemical Oxygen Demand	19	8	2.01	5.4
Bromide	19	3	1.02	1.43
Chemical Oxygen Demand	19	18	12.3	17100
Chloride	19	19	27.8	200
Color (True) (C.U.)	19	19	10	200
Hardness	19	19	328	675
Sulfate	19	19	4.26	26.3
Total Dissolved Solids	19	19	357	925
Total Kjeldahl Nitrogen	19	19	2.17	14.8
Total Organic Carbon (TOC)	18	18	2.04	26
Total Phenolics	19	1	0.00588	0.00588

Landfill Gas Monitoring

Landfill gas monitoring has been conducted at the site for approximately 10 years using an FID and an O_2/LEL meter. This monitoring has provided substantial characterization of the landfill gas and shown fairly consistent results. Several of the gas vents, leachate clean outs and manholes exhibit high concentrations of Methane and low levels of Oxygen, while the landfill perimeter readings are generally within normal background levels. Additional gas monitoring was conducted in June 2005 using a GEM 2000 landfill gas meter to provide more characterization of the landfill gas. The June 2005 monitoring showed several locations with Methane readings between approximately 33% and 97%. This monitoring has demonstrated that the primary landfill gas is Methane. Starting with the March 2007 monitoring event, a PID has been utilized instead of an FID. The PID provides monitoring of VOCs while an O_2/LEL meter continues to be used to monitor Oxygen and Methane.

Residential Water Supplies

There are 20 residential water supply locations in the monitoring program. The current monitoring schedule requires that three water supplies be sampled semi-annually (spring and fall) and the remaining 17 locations be sampled every three years. The table below presents a summary of detected parameters from the last five years of sampling, which includes sampling of the available 20 locations in 2005 and 2008.

Summary of 2004 through 2008 Residential Water Supply Detected Parameters (mg/L)

Parameter	Number of Samples	Number of Detections	Minimum Detection	Maximum Detection	Class GA Standard	Number of Class GA Exceedances	NYSDOH MCL	Number of NYSDOH MCL Exceedances
Barium	53	52	0.002	0.11	1	0	1	0
Calcium	53	53	3.4	54.4				
Copper	53	20	0.01	0.16	0.2	0	1	0
Iron	53	25	0.06	1	0.3	9	0.3	9
Lead	53	1	0.015	0.015	0.025	0	0.05	0
Magnesium	53	53	1.6	20.8				
Manganese	57	35	0.0054	2.8	0.3	14	0.3	14
Potassium	53	53	0.7	4.4				
Sodium	53	53	1.1	104	20	28		0
Zinc	53	11	0.011	0.22			5	0
cis-1,2-Dichloroethene	58	9	0.00084	0.0021	0.005	0		
Trichloroethene	58	9	0.0012	0.0028	0.005	0	0.005	0

As shown in the table above, two parameters (Iron and Manganese) have shown exceedances of standards during the last five years. Eight of the nine Iron exceedances are from location WAL-2, which is a seasonal hunting camp adjacent to the Southwest corner of the landfill. The other Iron exceedance is WAL-17 in November 2005. WAL-17 is located approximately 8000 feet from the landfill; therefore this exceedance is unlikely related to the site. The Manganese exceedances are from WAL-2 and WAL-20. WAL-20 is also located approximately 8000 feet from the site and Manganese concentrations have been near or below detection limits since this residential well was replaced in 2005. The VOC detections shown in the table above are from pre-filtered WAL-19 samples. WAL-19 is located Southeast of the landfill and includes a two-stage carbon treatment system maintained by the Village of Wellsville.

Summary of Monitoring Results Evaluation

Volatile Organic Compounds and to a lesser extent, metals, are the constituents of concern at the site. VOCs groundwater concentrations are stable at most wells and trending upward at three wells. The locations where VOCs are trending upward are immediately adjacent to the landfill and this upward trend is indicative of minimal groundwater flow. Groundwater level drawdown during sampling and slow recovery (in some cases days) further illustrate that groundwater flow is extremely measured. Metals have shown exceedances of standards in both upgradient and downgradient wells and in many cases are naturally occurring. Wet Chemistry parameters in groundwater are generally below standards and do not appear to be a good indicator of landfill impacts on groundwater at this site. This is contrary to typical municipal solid waste landfills and should be considered when evaluating future site monitoring needs. Surface water and sediment sampled at location SWS-1 appears un-impacted by the site. Groundwater collection system sampling shows some signs of decreasing concentrations, but results do not meet surface water standards at this time. Leachate continues to show several detections, but is generally

more dilute as compared to operating municipal landfills. Two Residential water supplies close to the landfill continue to show detections of constituents of concern.

These 11 years of monitoring results demonstrate that the remedial action goals continue to be met. Leachate quantities have greatly decreased following the remedial action. Surface water is not impacted by the site. Contaminated groundwater and landfill gas migration is being controlled. The remedial action has mitigated significant threats to public health and the environment.

Proposed Monitoring Program

Based on the above evaluation of monitoring results, a revised monitoring program has been designed to meet the needs of continued surveillance of the remedial objectives into the future. VOCs and metals are the primary constituents of concern and wet chemistry parameters do not appear to be good indicators at this site. The project analyte list is proposed to be revised to include field parameters, VOCs and metals with a few exceptions. The proposed monitoring requirements are presented in Table 2 attached and discussed below.

Groundwater

Groundwater sampling is proposed to be conducted annually, each Fall, in an attempt to capture annual high groundwater concentrations. Sampling locations will include currently sampled wells, with the following exceptions. Upgradient well MW-1D will not be sampled because upgradient water quality has been adequately characterized and no concern of an upgradient contaminate source. Sampling of overburden wells CW-3A and CW-4A will be discontinued because overburden wells CW-3B and CW-4B are immediately adjacent to these wells and show similar water chemistry. Bedrock well MW-15DA has not been sampled following the remedial action, because it has been dry. MW-15DA will be removed from the required sampling list.

Surface Water and Sediment

Surface water at location SWS-1 will be sampled during the annual Fall event with analysis for field parameters, VOCs, Metals, Nitrate Nitrogen and Total Dissolved Solids (TDS). Nitrate Nitrogen and TDS are tested in anticipation that the groundwater cut-off system may one day discharge to surface water and these two parameters frequently exceed Class C surface water standards in groundwater cut-off system water. Sediment sampling at this location has limited usefulness and is therefore discontinued.

Groundwater Cut-Off System

Manholes MH-32 and MH-33 will be sampled during the annual Fall event with analysis for field parameters, VOCs, Metals, Nitrate Nitrogen and TDS. Sampling of these locations is conducted in anticipation of future discharge to surface water.

Leachate

Leachate sump will be sampled during the annual Fall event.

Landfill Gas Monitoring

Landfill gas has been adequately characterized and has not been detected at the landfill perimeter; therefore landfill gas monitoring will be discontinued.

Residential Water Supply

Hunting camp WAL-2 will be sampled annually for metals. Resident WAL-5 will be sampled annually for VOCs and Metals. The two-stage carbon treatment unit will be maintained at residence WAL-19 with semi-annual sampling for VOCs prior to filtration, between the filters and post filtration. The remainder of the residential water supply sampling will be discontinued.

The Village of Wellsville and On-Site appreciate your review and consideration on this matter. If you have any questions or require any clarification on the information presented in this letter, please call the undersigned.

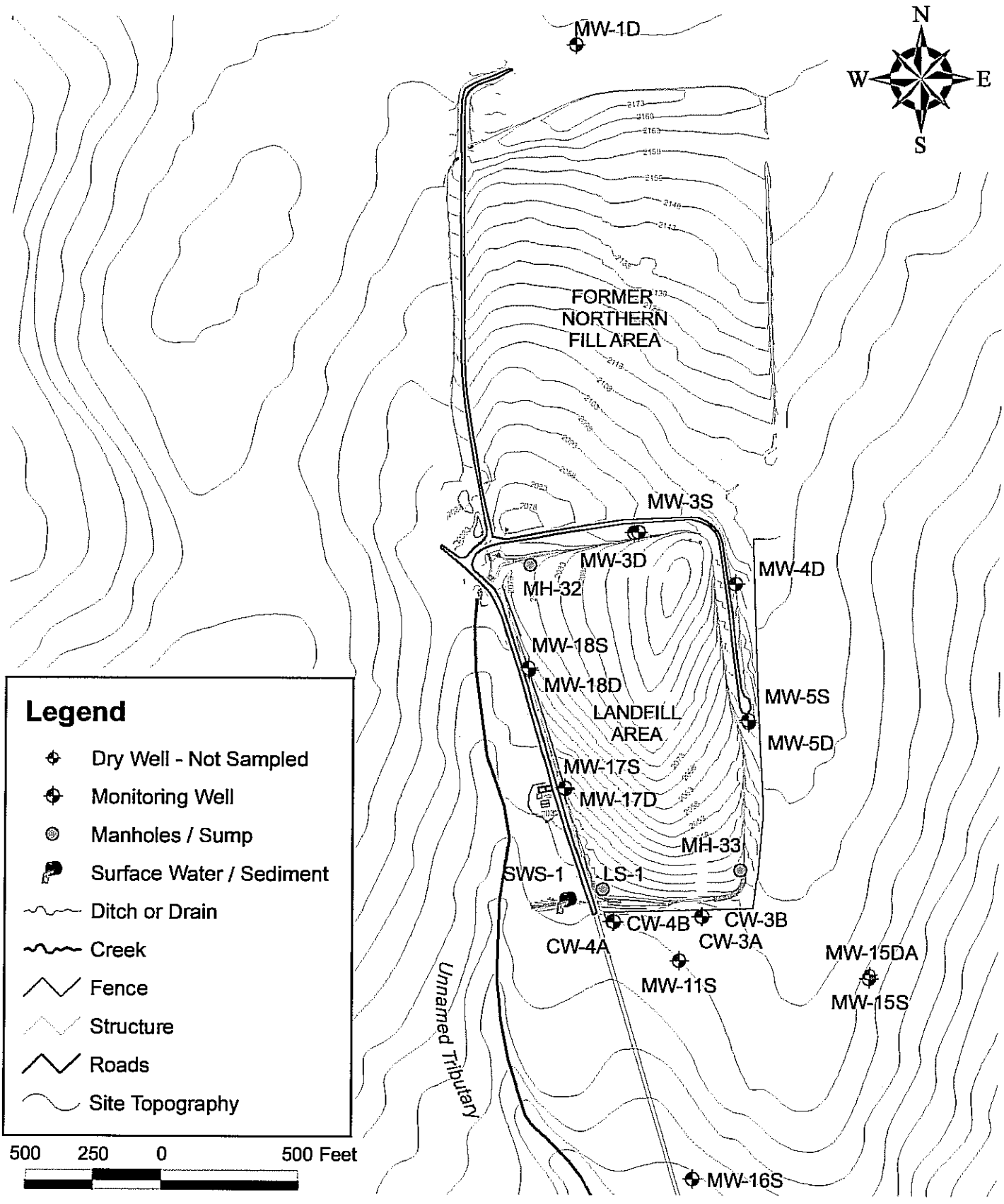
Sincerely,

Jonathan E. Brandes, P.G.
Senior Geologist

cc: Bill Whitfield, Village of Wellsville
Judy Lynch, Village Trustee, Liaison to Landfill
Tamara S. Girard, NYSDOH

Attachments

SAMPLING LOCATIONS



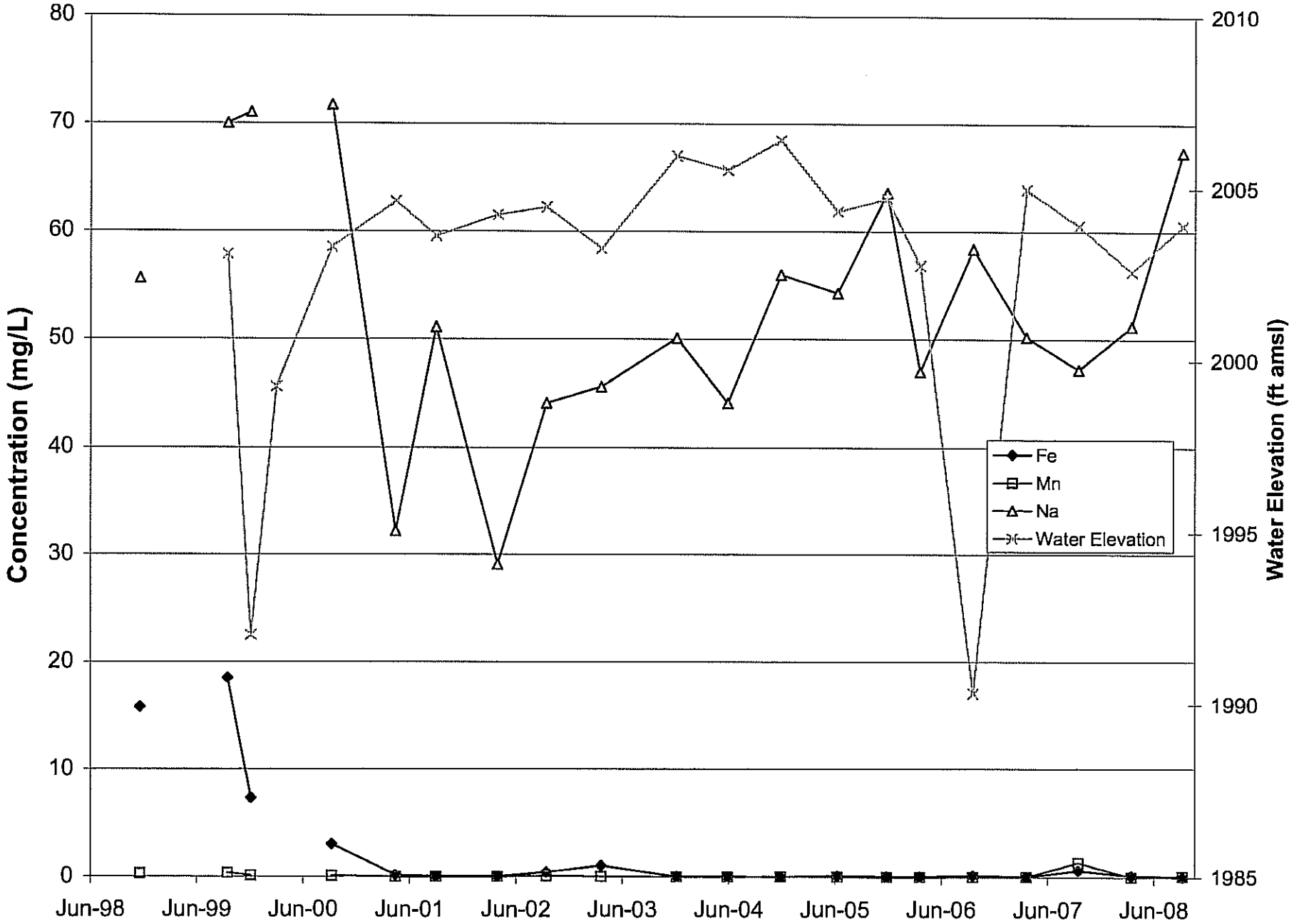
ON-SITE TECHNICAL SERVICES, INC.

72 Railroad Avenue Wellsville, NY 14895

FIGURE NO.	1
PROJECT	WAL
DOCUMENT	2009 Site Review
FILE NO.	Fig 1 - Samp Locs.mxd

N:\WAL\2009 SITE REVIEW\FIG 1 - SAMP LOCS.MXD

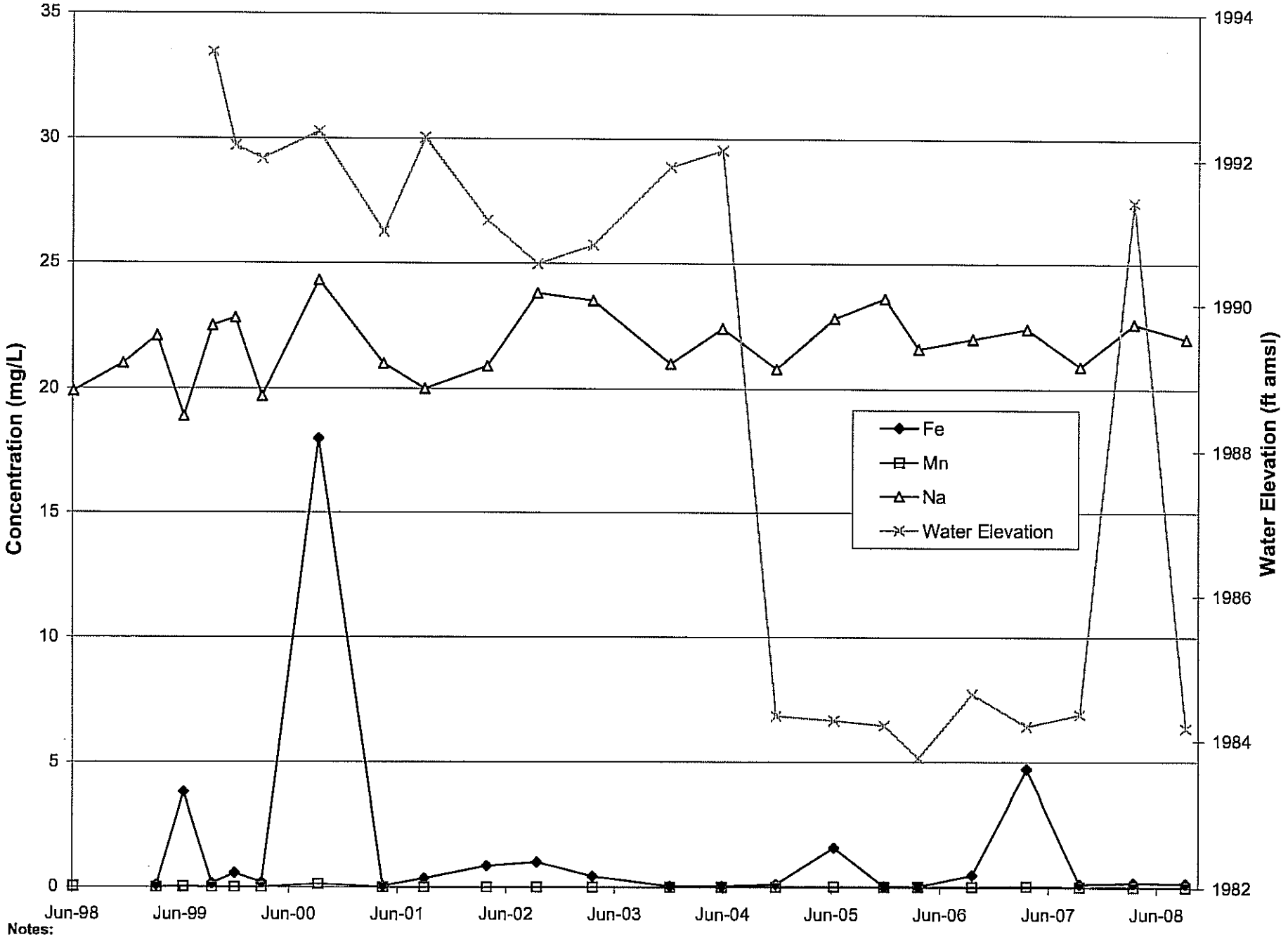
CW-3A Metals



Notes:

1. The majority of results for Manganese and Iron are non detect.
2. 1/2 Detection limit used for non-detects.

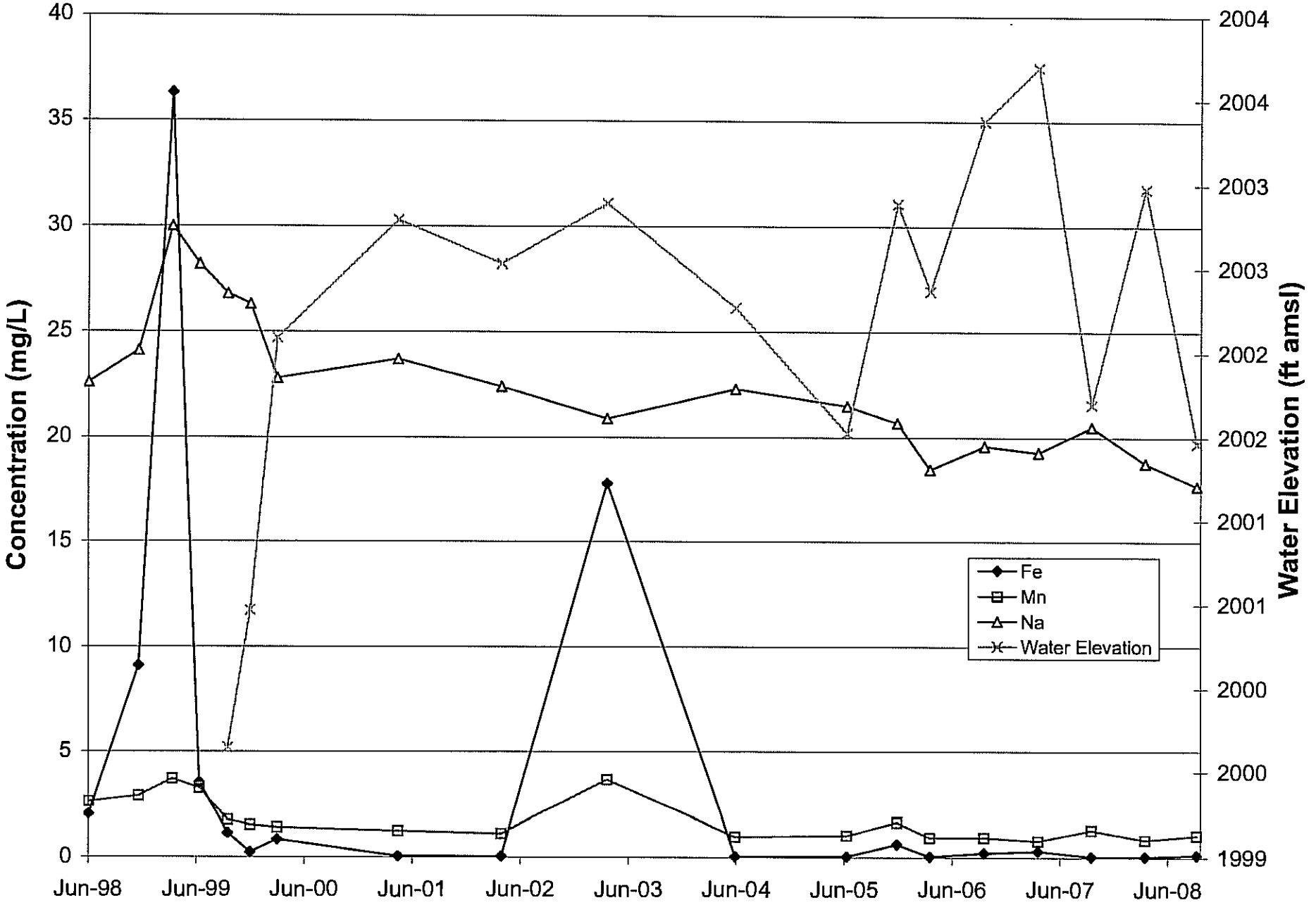
CW-3B Metals



Notes:

1. A majority of results for Manganese and Iron are non-detects.
2. 1/2 detection limit used for non-detects.

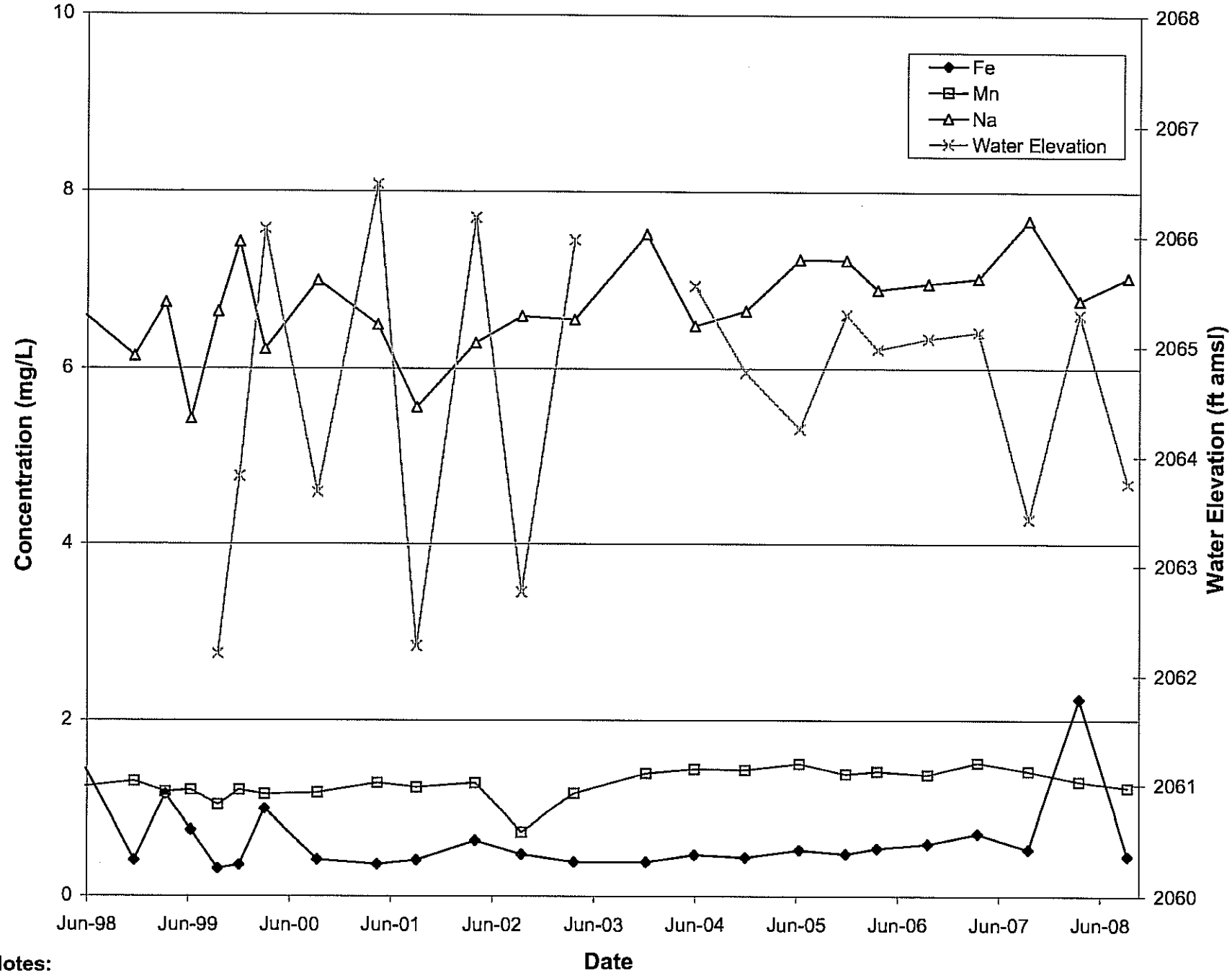
CW-4B Metals



Notes:

1. 1/2 detection limit used for non-detects
2. Iron is non-detect on 4/25/2001, 4/9/2002, 6/8/2004, 6/20/2005, 3/28/2006, 9/25/2007 and 3/25/2008

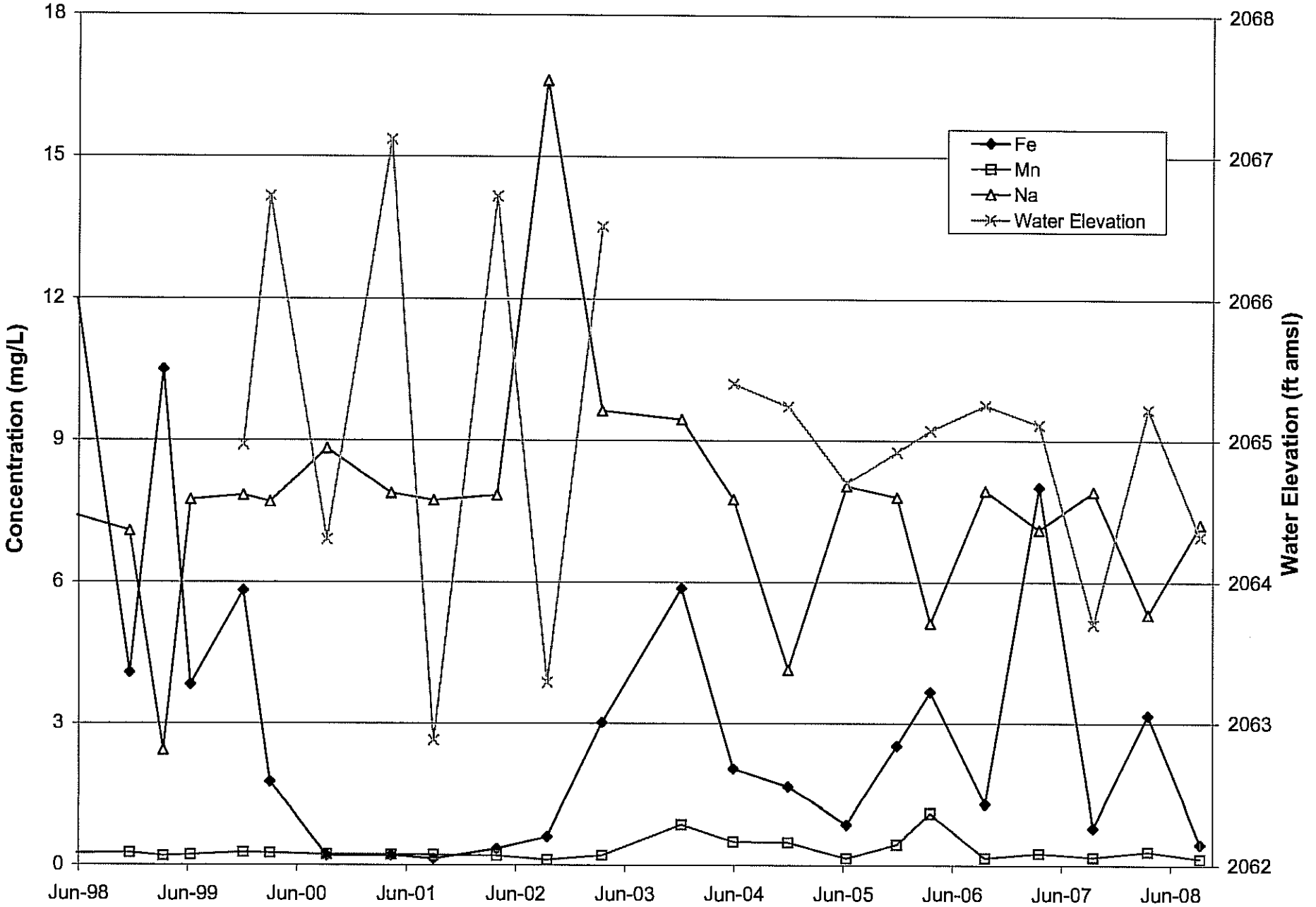
MW-5D Metals



Notes:

1. 1/2 Detection limit used for non-detects
2. No water elevation available December 2003.

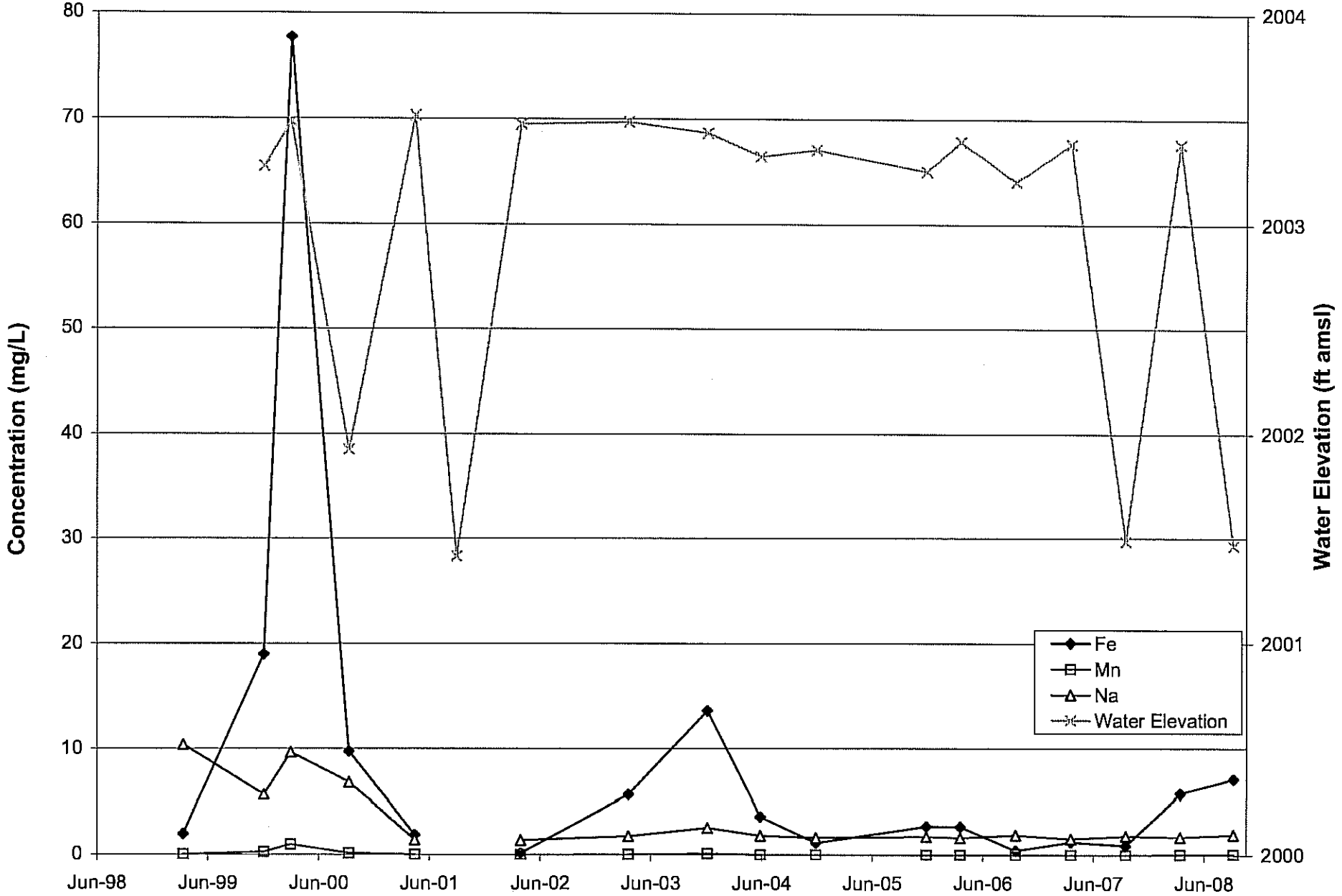
MW-5S Metals



Note:

1. 1/2 detection limit used for non-detects.
2. No water elevation available for December 2003.

MW-15S Metals

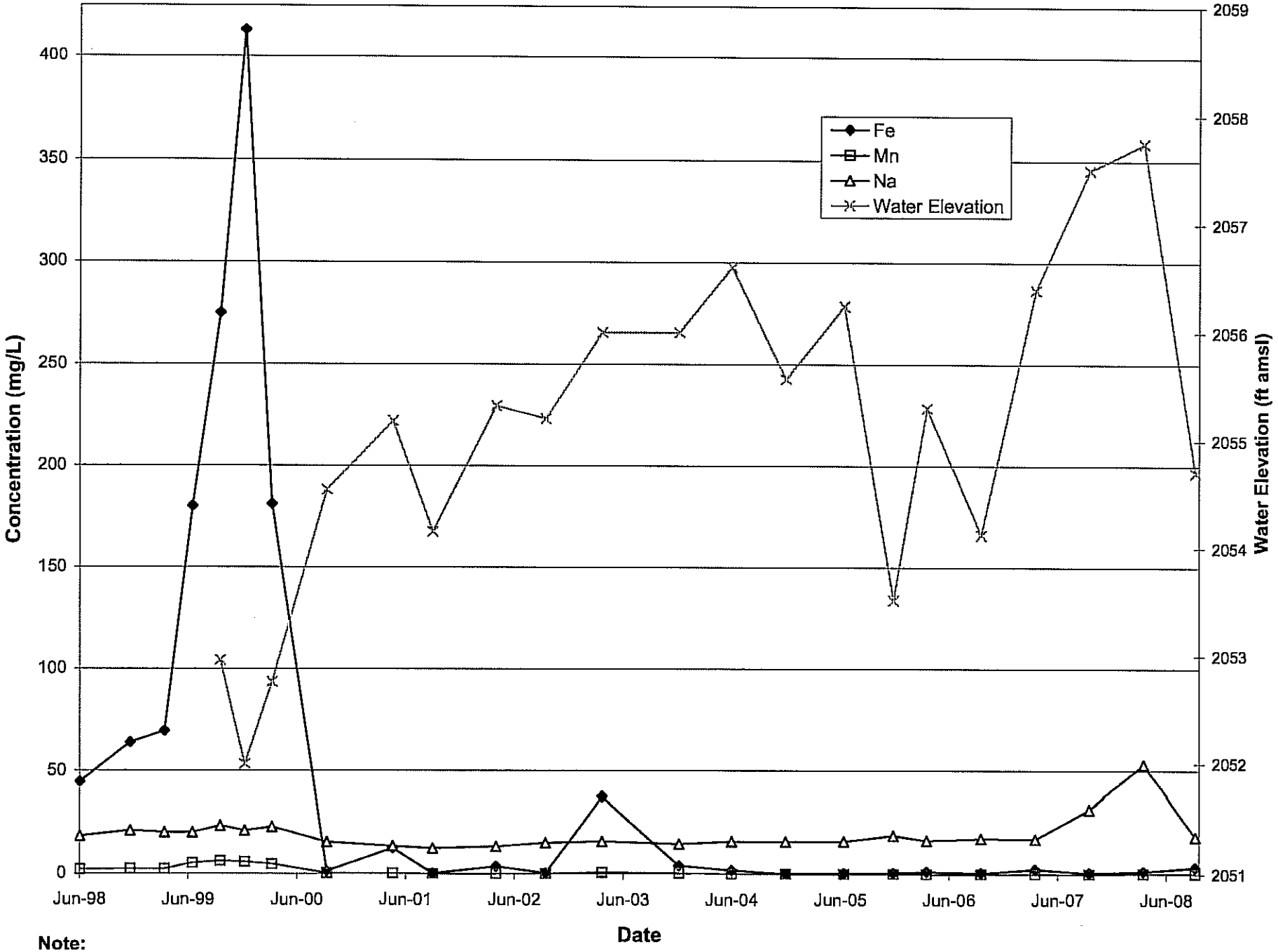


Notes:

1. 1/2 detection limit used for non-detects
2. Manganese is non-detect on 4/10/2002 and 9/28/2006.
3. VOCs only collected on 9/11/2001 due to insufficient water volume.

Date

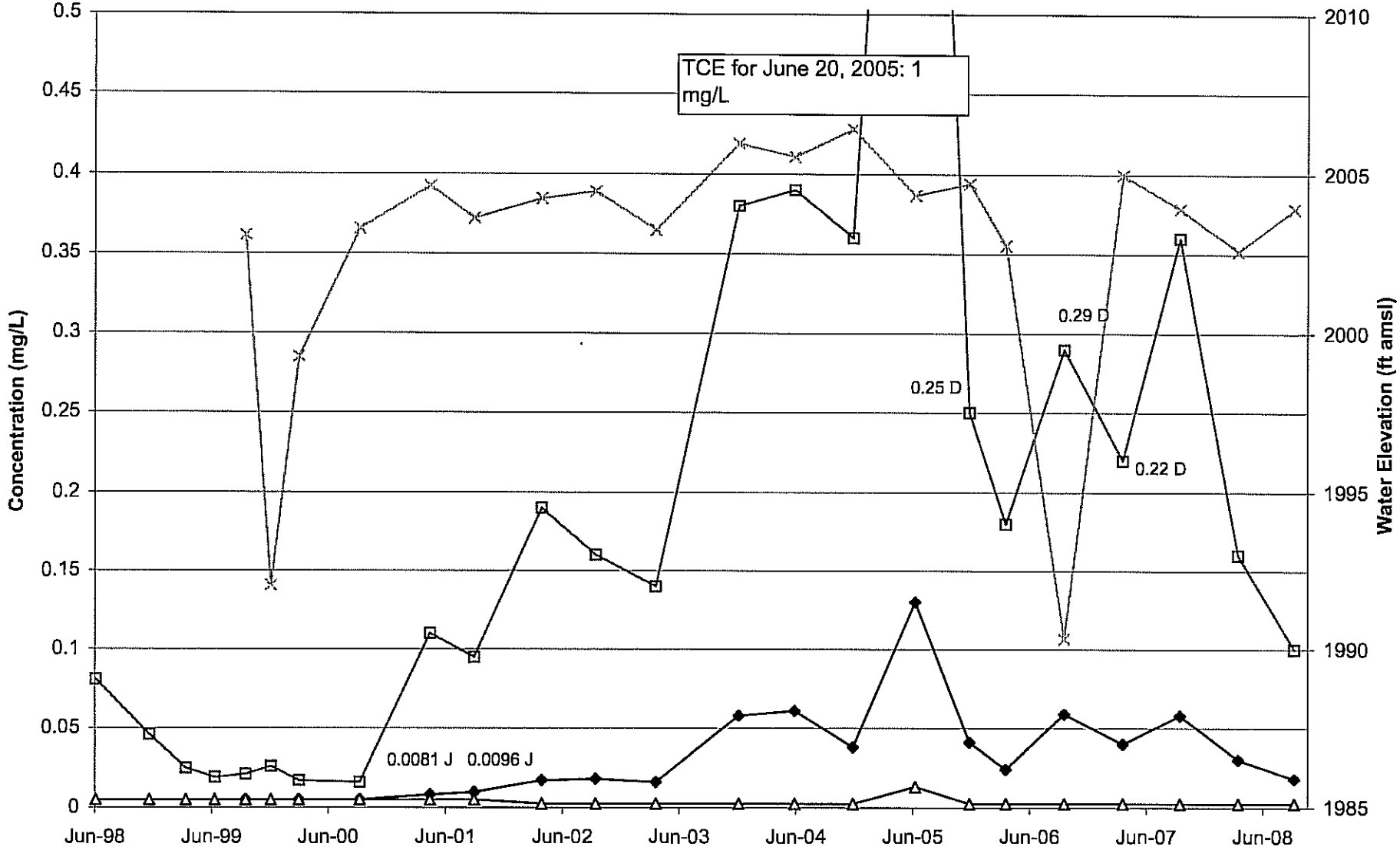
MW-18S Metals



Note:

1. 1/2 Detection limit used for non-detects

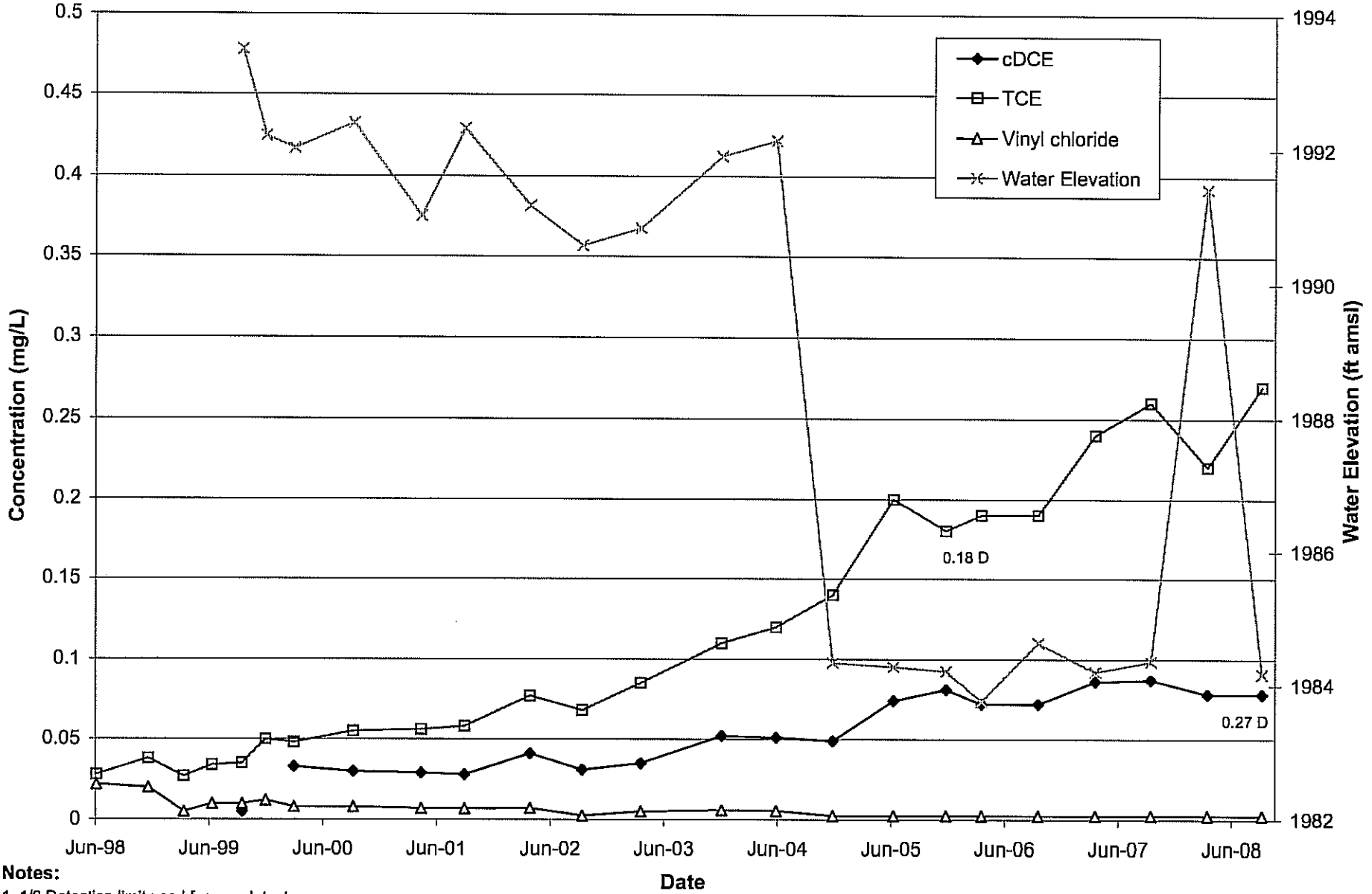
CW-3A VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. Vinyl choride results are non-detected except in June 2005.
4. Results for cis-1,2-Dichloroethene on 3/13/2000 and 9/19/2000 are non-detect and estimated on 4/26/2001 and 9/11/2001.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.

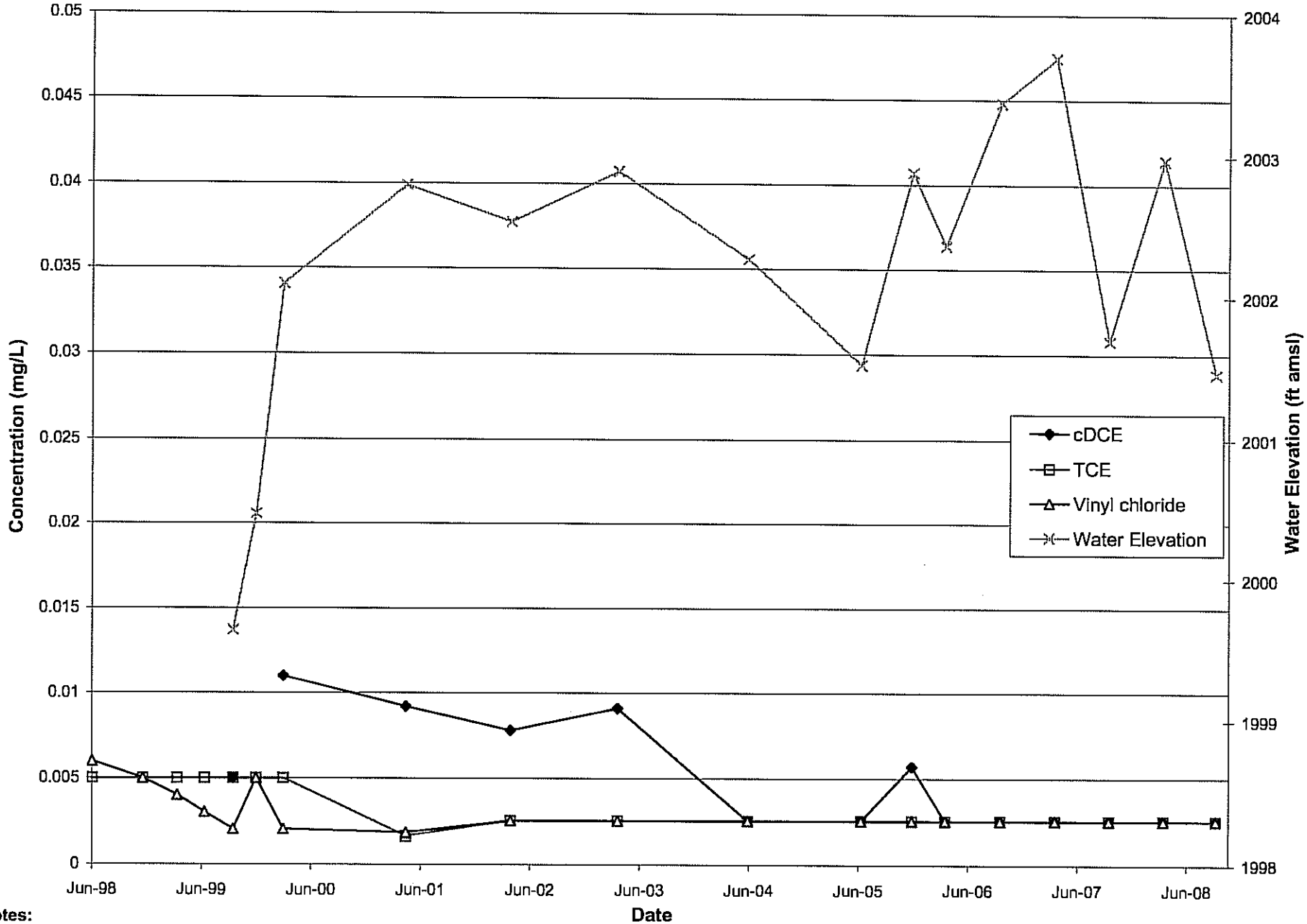
CW-3B VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. The majority of Vinyl chorlde results are non-detect. Vinyl chorlde results on 3/13/2000, 9/19/2000,4/25/2001and on 9/11/2001 are estimated values.
4. Results for cDCE on 9/28/1999 are non-detect.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.

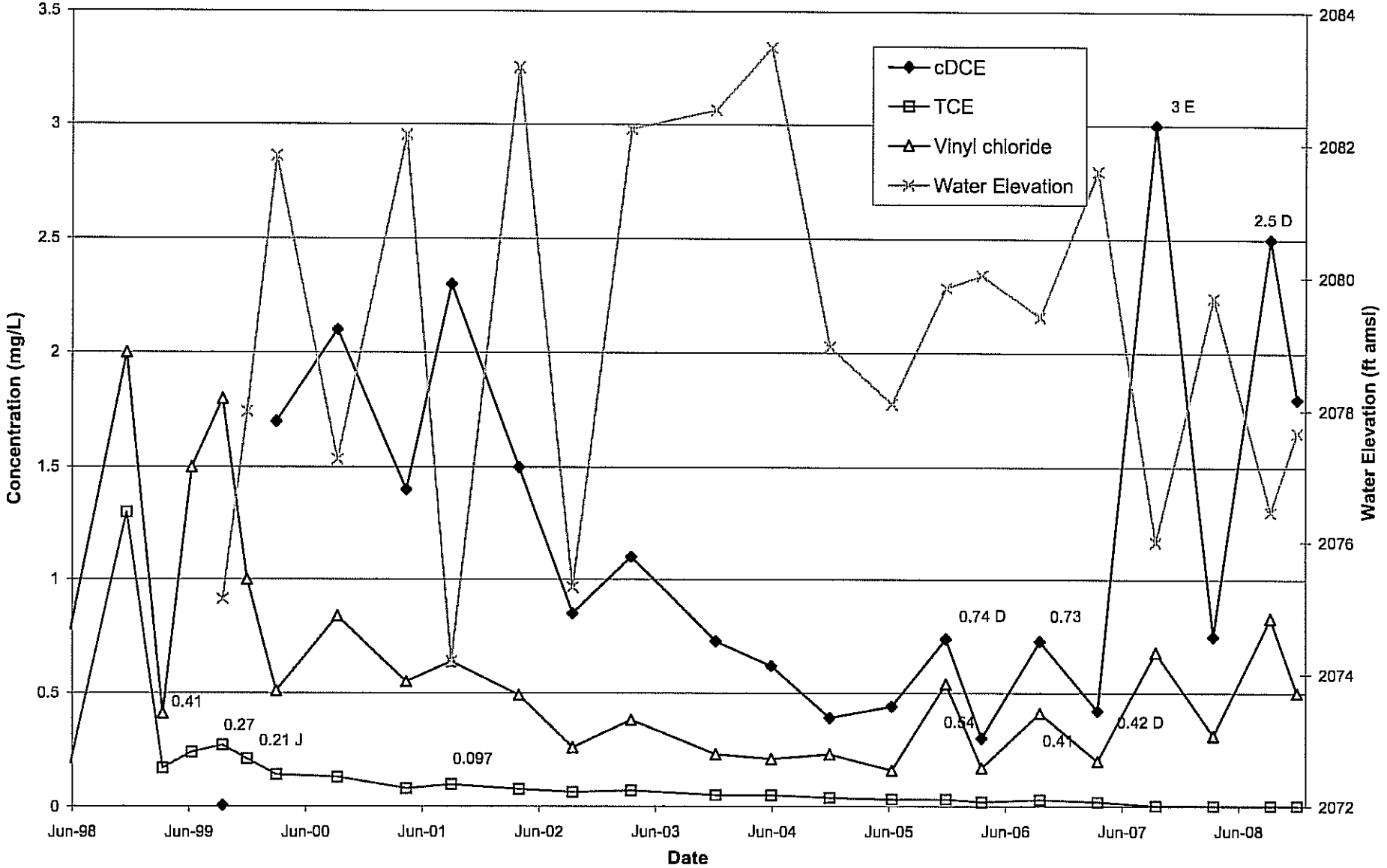
CW-4B VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE and Vinyl chorlde results are either non-detect or estimated values.
4. A majority of cDCE results are non-detect.

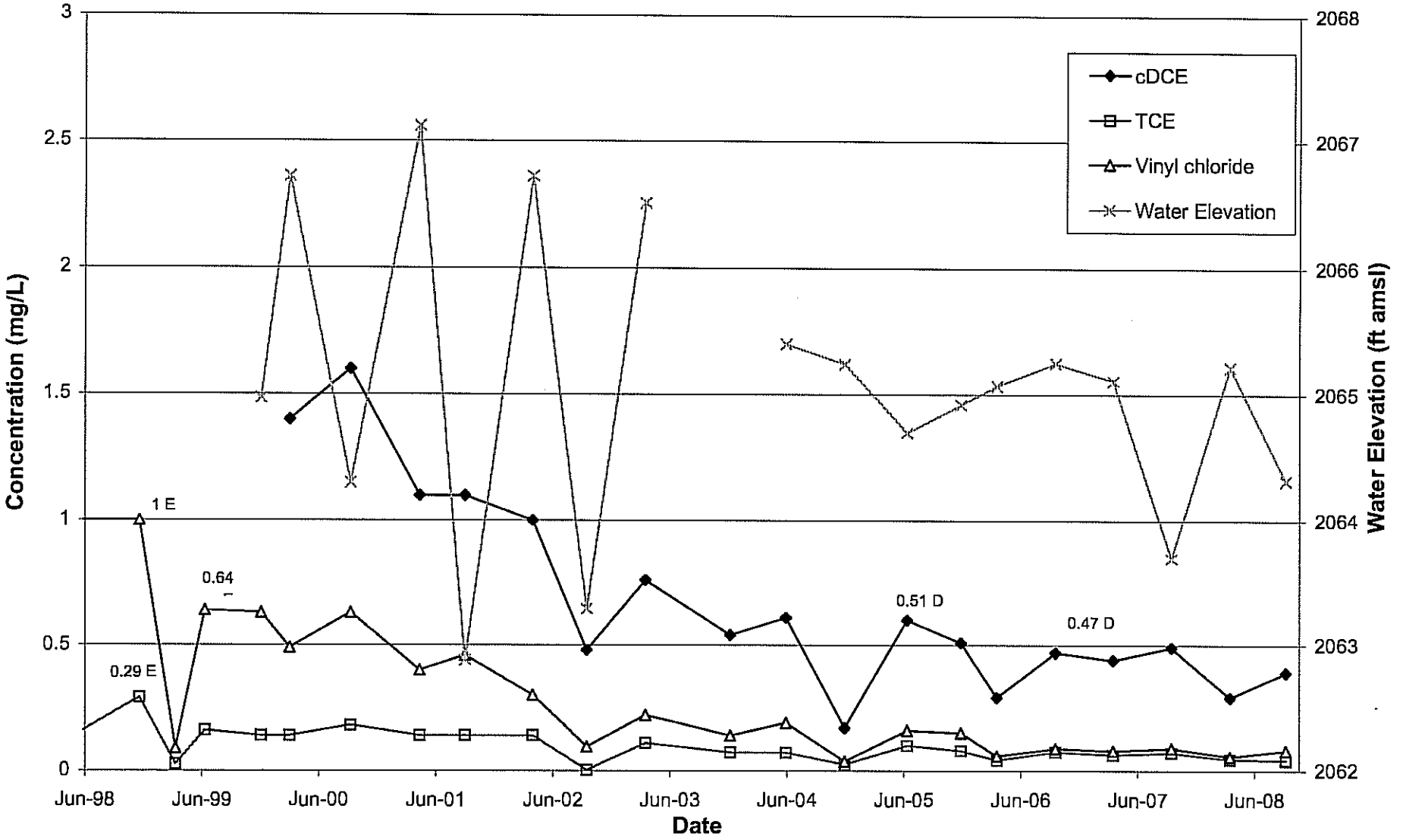
MW-4D VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. E - Results are greater than the calibration range of the instrument used for analysis
4. J - Estimated value.
5. D - This flag indicates a result from a diluted sample.
6. TCE is non-detect on 9/25/2007 and 3/24/2008.
7. Data with flag labeled on graph as appropriate.

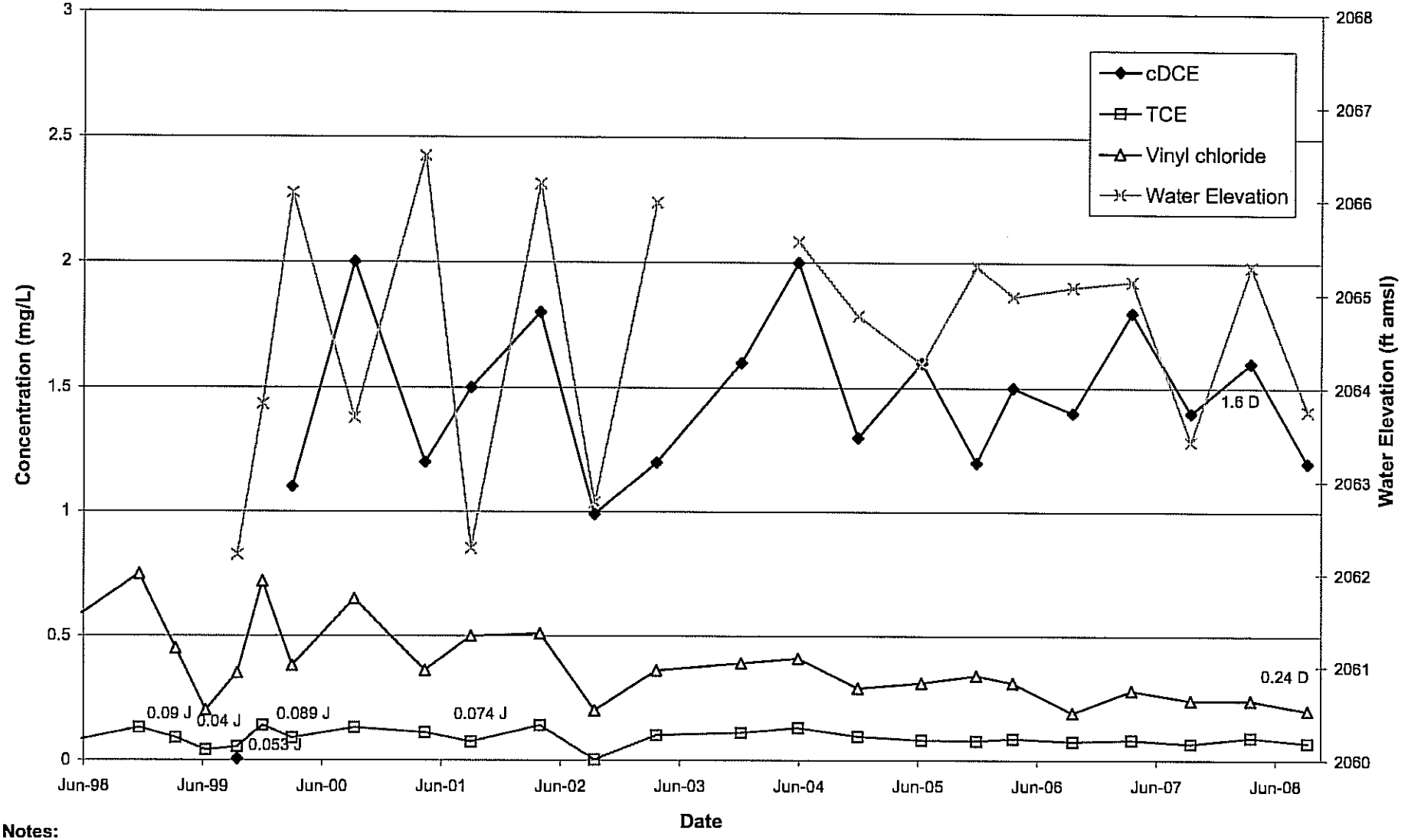
MW-5S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE result on 9/26/2002 is non-detect.
4. E - Results are greater than the calibration range of the instrument used for analysis.
5. D - This flag indicates a result from a diluted sample.
6. Data with flag labeled on graph as appropriate.
7. No water elevation available for December 2003.

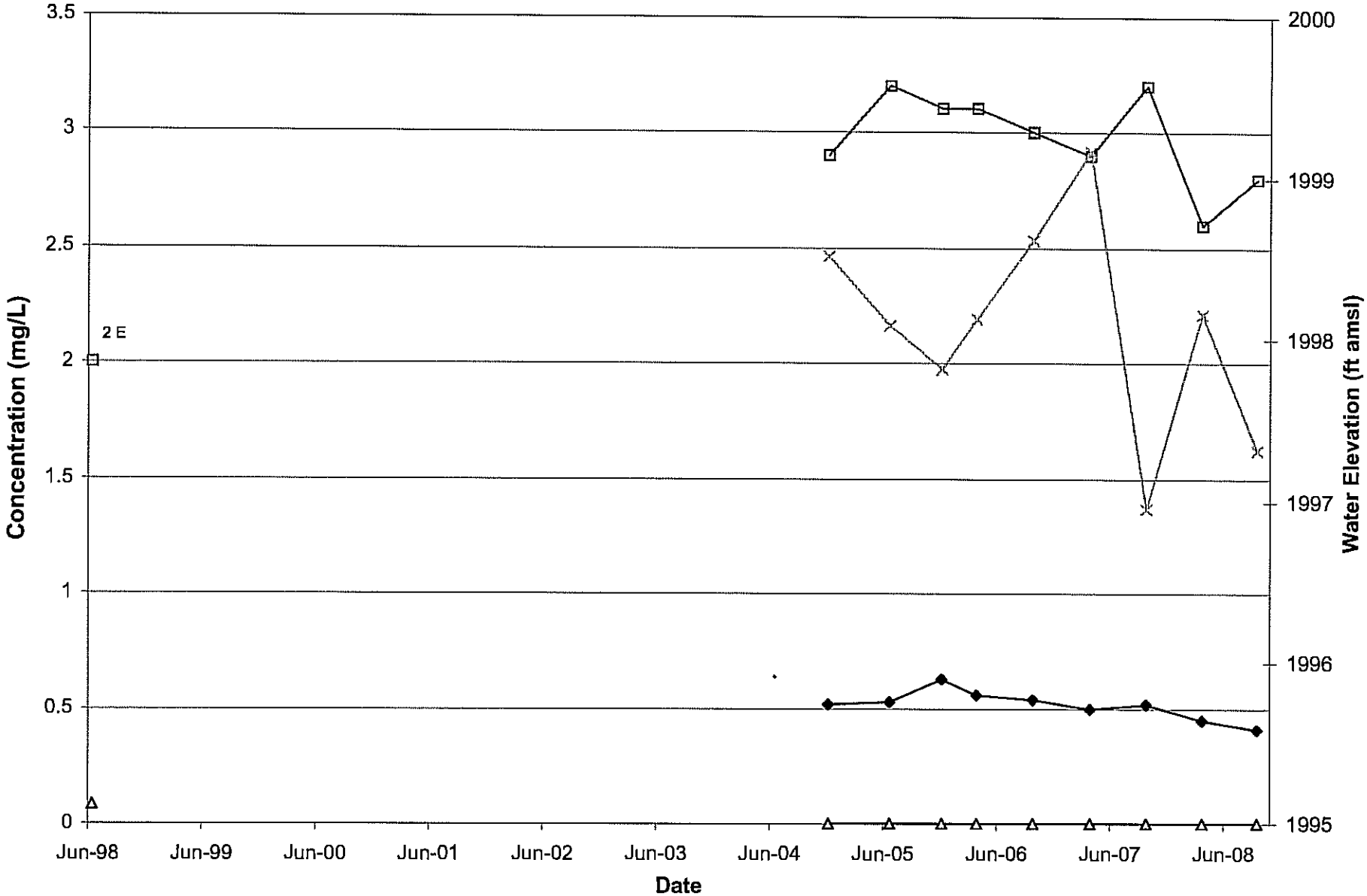
MW-5D VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/9/1998, 9/23/1999, 6/23/1999, 9/28/1999, 3/14/2000 and 9/12/2001 are estimated values.
4. Result for cDCE on 9/28/1999 is non-detect.
5. J - Estimated values.
6. D - This flag indicates a result from a diluted sample.
7. Data with flag labeled on graph as appropriate.
8. No water elevation available December 2003.

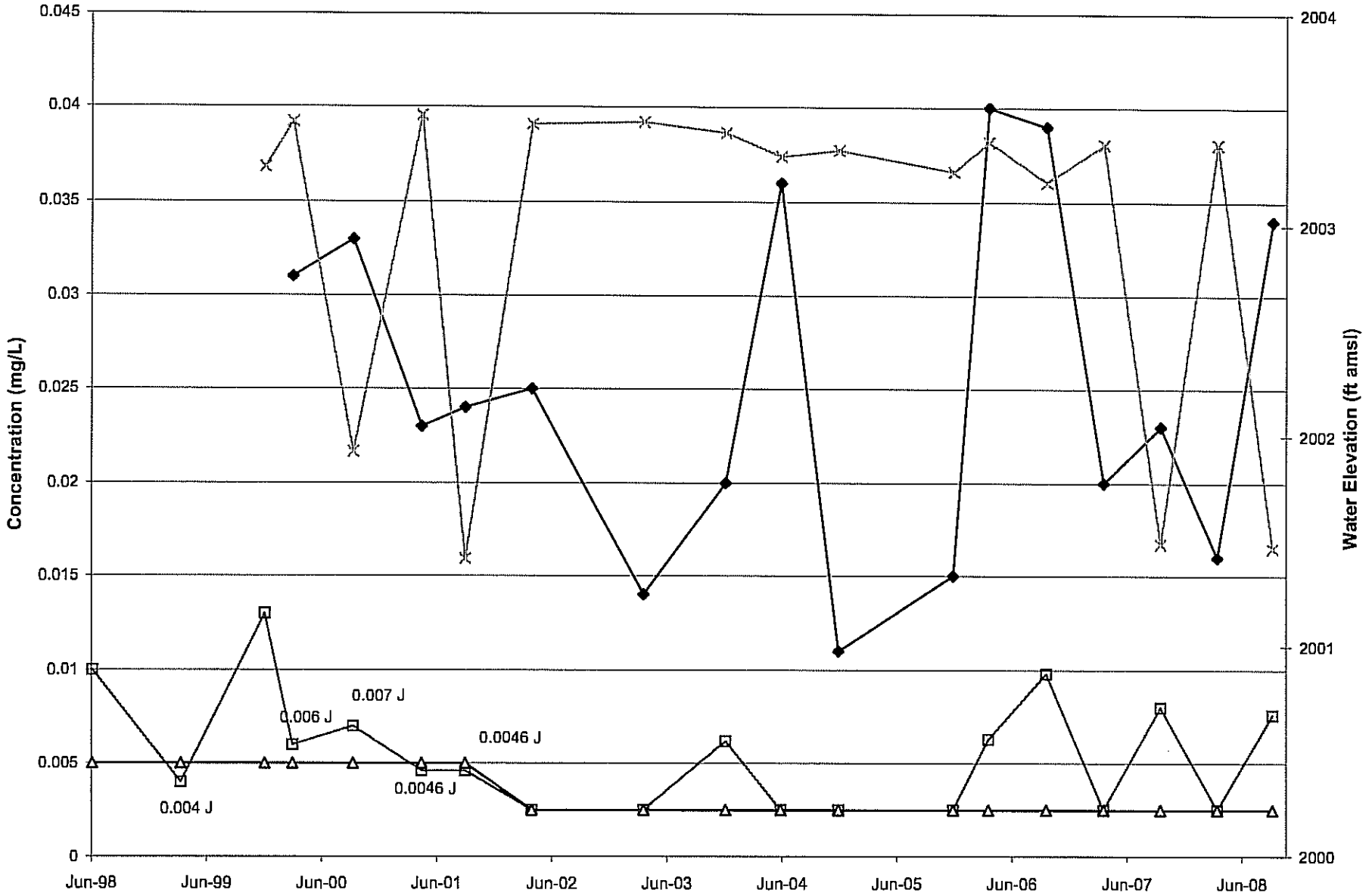
MW-11S VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. E - Results are greater than the calibration range fo the instrument used for analysis.
4. Vinyl chloride results are non-detect with an exception of result on 6/17/1998.
5. Data with flag labeled on graph as appropriate.

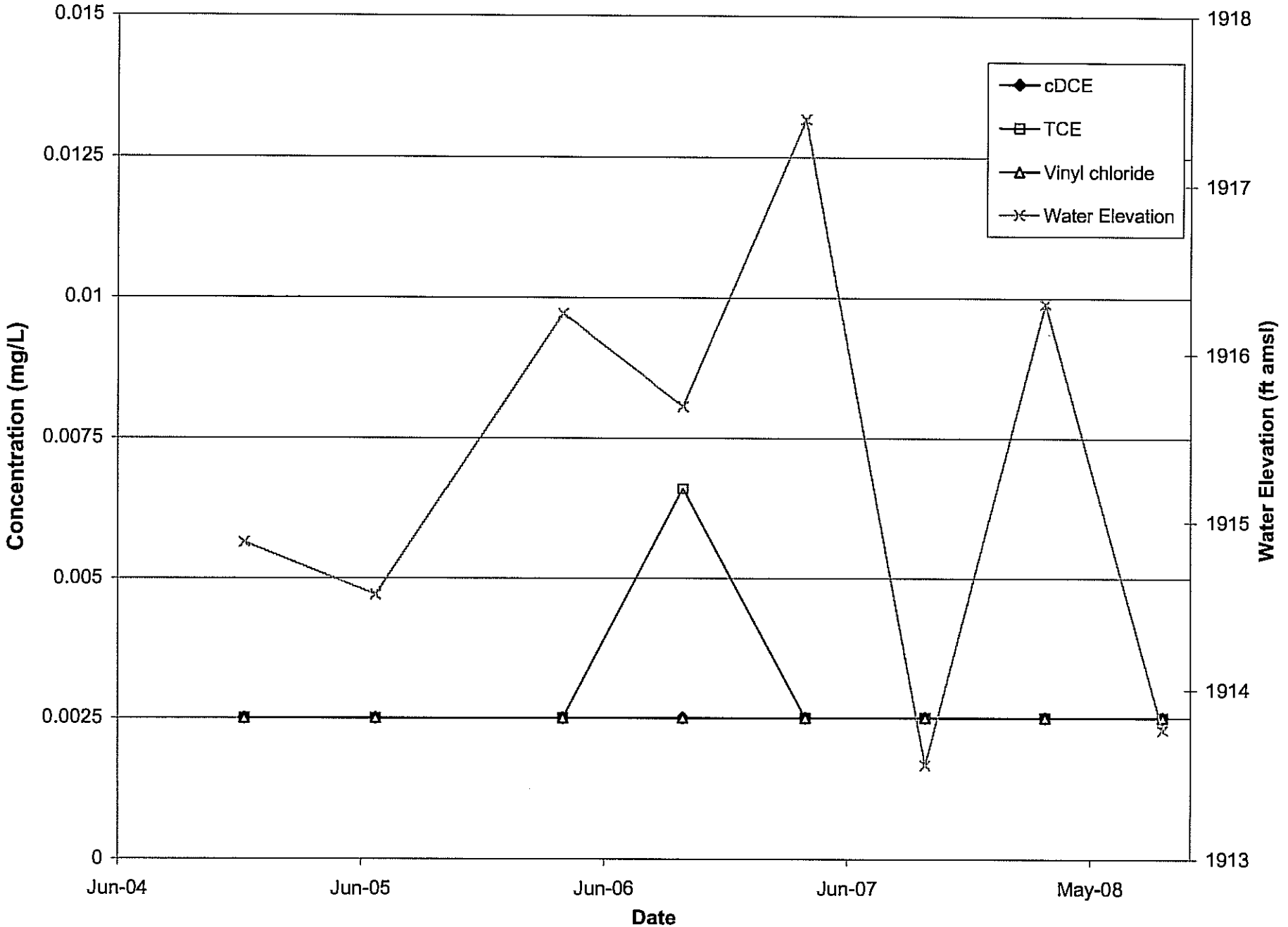
MW-15S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. J - Estimated value.
4. All Vinyl chloride and a majority of TCE results are non-detect.
5. Data with flag labeled on graph as appropriate.

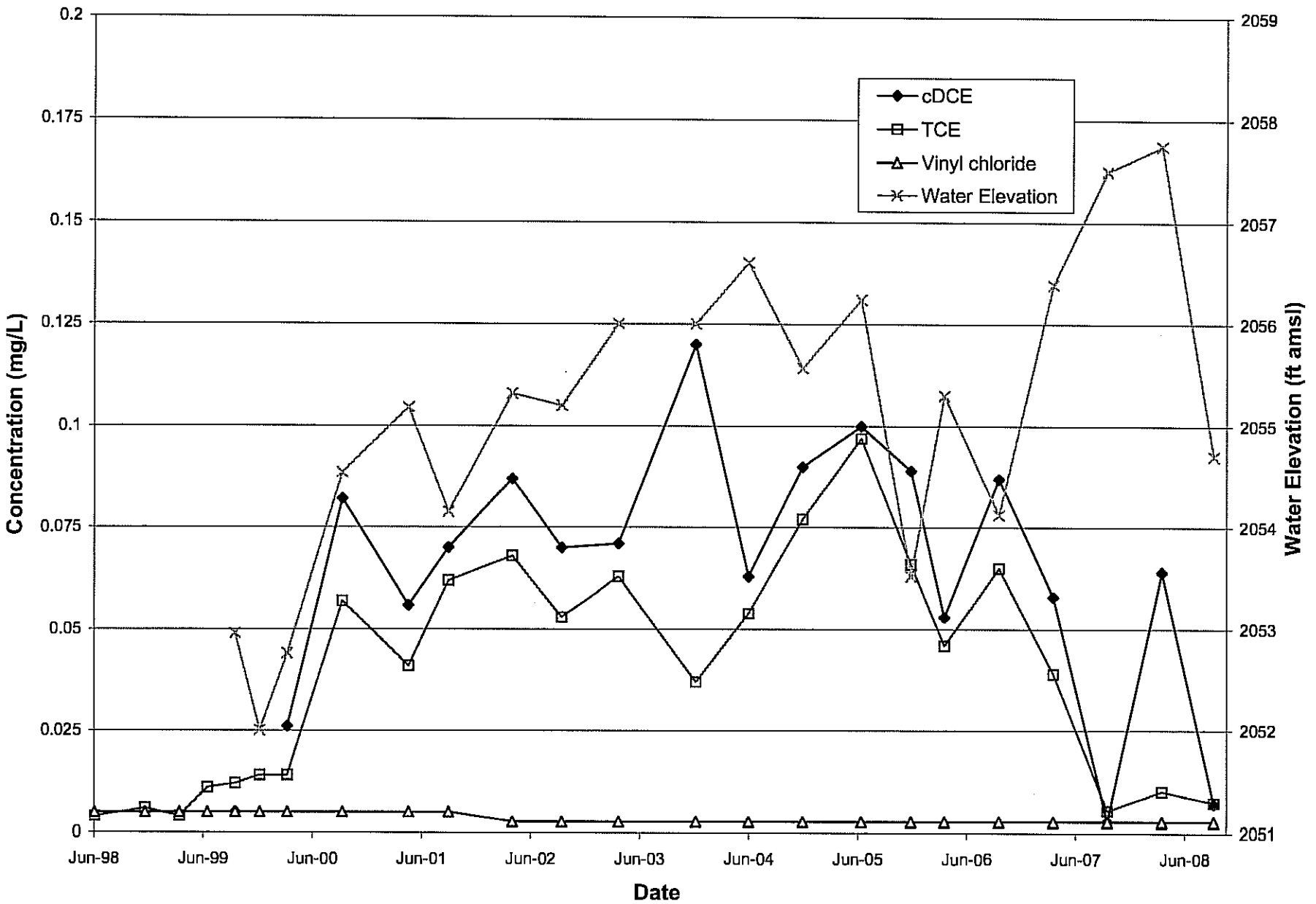
MW-16S VOCs



Notes:

1. All values for cDCE, TCE and Vinyl chloride are non-detect with the exception of TCE on 9/27/2006.
2. There is no data available for MW-16S prior to December 2004.

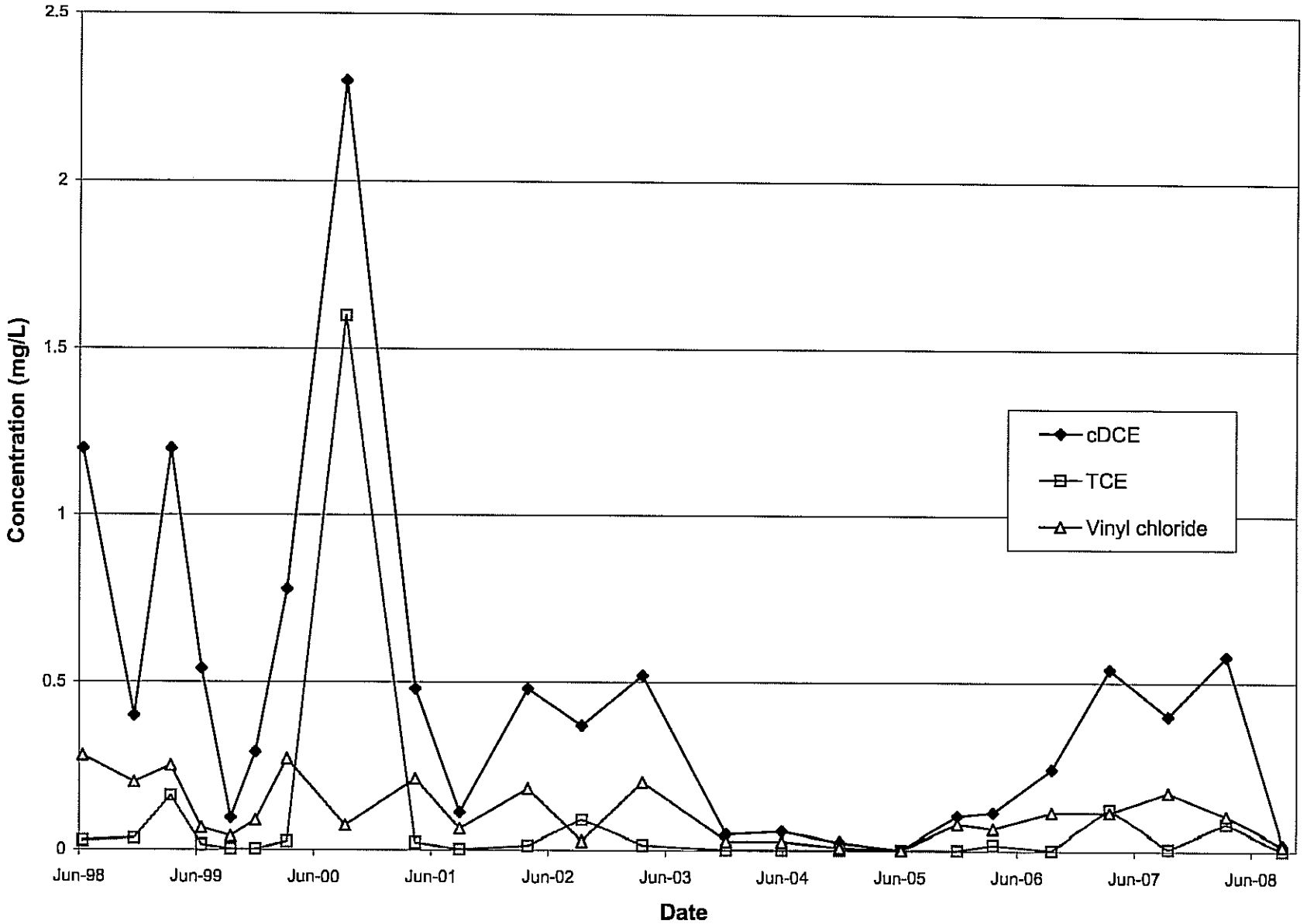
MW-18S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/15/1998, 12/1/1998 and 3/26/1999 are estimated values.
4. Vinyl chloride results are non-detect; cDCE is non-detect on 9/29/1999 and 9/25/2007.

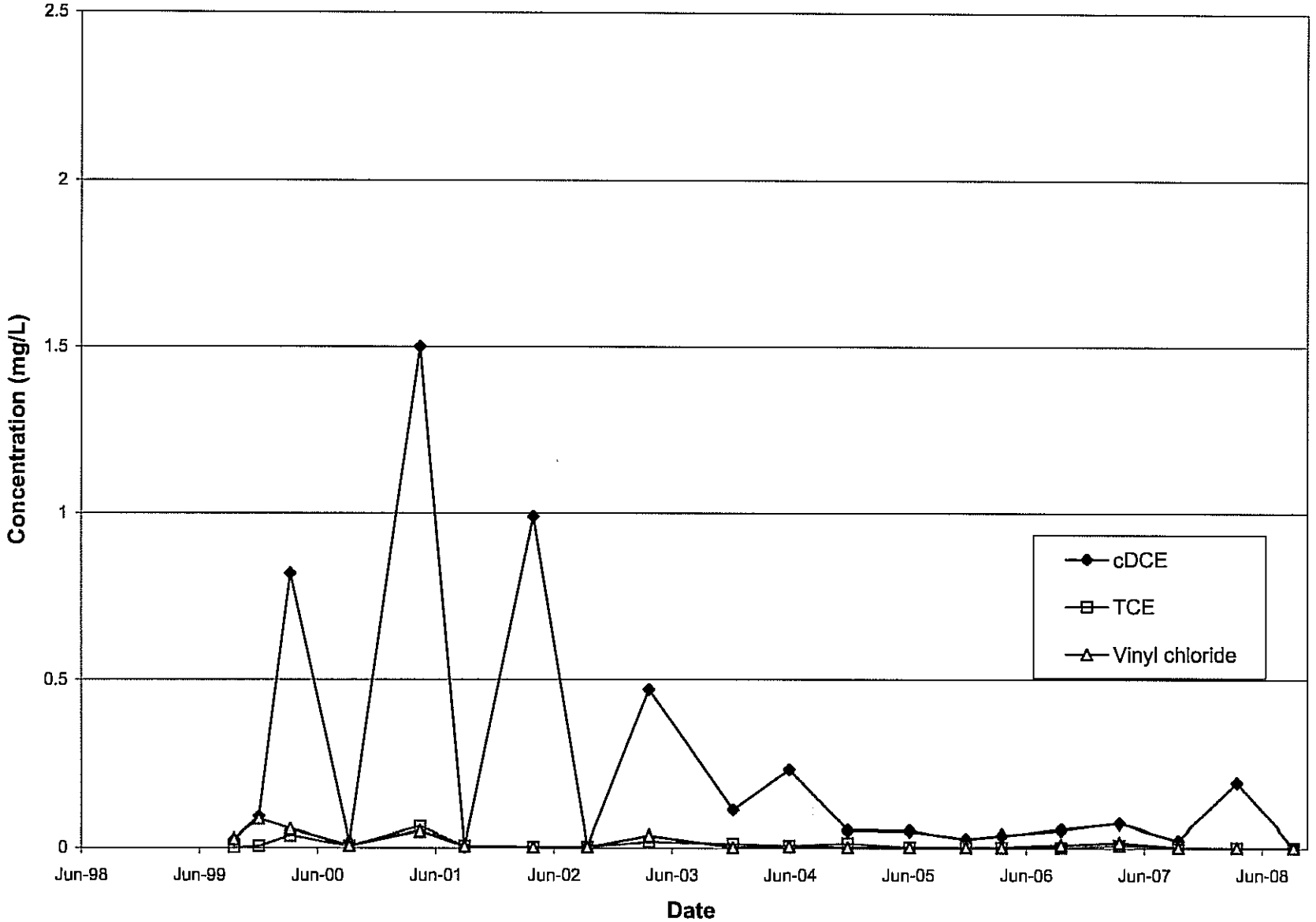
MH-32



Notes:

1. 1/2 Detection limit used for non-detects.

MH-33



Notes:

1. 1/2 Detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well CW-3A Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	12/1/98	3/25/99	6/24/99	9/28/99	12/16/99	3/13/00	9/19/00	4/26/01	9/11/01	4/10/02	9/25/02	4/1/03	12/16/03	6/8/04	12/7/04	6/20/05	12/6/05	3/30/06	9/28/06	3/30/07	9/25/07	3/25/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Result (mg/L)	0.086	0.048	0.03	0.021	0.024	0.027	0.017	0.032	0.1301	0.113	0.207	0.178	0.156	0.438	0.451	0.398	1.143	0.291	0.204	0.349	0.26	0.418	0.19	0.118	Count "+"	Count "-"
0.086		-	-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	7
0.048			-	-	-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	6
0.03				-	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	4
0.021					+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	1
0.024						+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	18	1
0.027							-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	1
0.017								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	0
0.032									+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0
0.1301										-	+	+	+	+	+	+	+	+	+	+	+	+	+	-	13	2
0.113											+	+	+	+	+	+	+	+	+	+	+	+	+	+	14	0
0.207												-	-	+	+	+	+	+	-	+	+	+	-	-	8	5
0.178													-	+	+	+	+	+	+	+	+	+	+	-	10	2
0.156														+	+	+	+	+	+	+	+	+	+	-	10	1
0.438															+	-	+	-	-	-	-	-	-	-	2	8
0.451																-	+	-	-	-	-	-	-	-	1	8
0.398																	+	-	-	-	-	+	-	-	2	6
1.143																		-	-	-	-	-	-	-	0	7
0.291																			-	+	-	+	-	-	2	4
0.204																				+	+	+	-	-	3	2
0.349																					-	+	-	-	1	3
0.26																						+	-	-	1	2
0.418																							-	-	0	2
0.19																								-	0	1
																									203 Total "+"	73 Total "-"

S = Total Number of "+" minus Total Number of "-" = 130

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is an upward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1625.33

z_o = 3.1998

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = (P(Z > z_o) = 1 - z_p, where z_p from Table A-1 = 0.9993

p-value = 0.0007

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 3.1998 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.0007 < 0.05

we reject the null hypothesis of no trend

Therefore: **We reject the null hypothesis of no trend in favor of the alternative hypothesis (i.e. evidence of upward trend).**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well CW-3B Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	12/1/98	3/25/99	6/24/99	9/28/99	12/13/99	3/13/00	9/19/00	4/25/01	9/11/01	4/9/02	9/24/02	3/31/03	12/16/03	6/8/04	12/7/04	6/20/05	12/6/05	3/30/06	9/28/06	3/30/07	9/25/07	3/25/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Result (mg/L)	0.104	0.094	0.054	0.085	0.08	0.116	0.091	0.093	0.0939	0.0947	0.1251	0.099	0.1251	0.168	0.1765	0.189	0.274	0.537	0.262	0.262	0.326	0.347	0.298	0.348	Count "+"	Count "-"
0.104		-	-	-	-	+	-	-	-	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	14	9
0.094			-	-	-	+	-	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	6
0.054				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	21	0
0.085					-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	1
0.08						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19	0
0.116							-	-	-	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	13	5
0.091								+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	17	0
0.093									+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	16	0
0.0939										+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	15	0
0.0947											+	+	+	+	+	+	+	+	+	+	+	+	+	+	14	0
0.1251												-	0	+	+	+	+	+	+	+	+	+	+	+	11	1
0.099													+	+	+	+	+	+	+	+	+	+	+	+	12	0
0.1251														+	+	+	+	+	+	+	+	+	+	+	11	0
0.168															+	+	+	+	+	+	+	+	+	+	10	0
0.1765																+	+	+	+	+	+	+	+	+	9	0
0.189																	+	+	+	+	+	+	+	+	8	0
0.274																		+	-	-	+	+	+	+	5	2
0.537																			-	-	-	-	-	-	0	6
0.262																				0	+	+	+	+	4	0
0.262																					+	+	+	+	4	0
0.326																						+	-	+	2	1
0.347																							-	+	1	1
0.298																								+	1	0
																									242	32
																									Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = 210

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is an upward trend.

STEP 3. Test Statistics:

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 2

g = the number of tied sample groups

V(S) = 1623.33

z_o = 5.1873

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.9999 (off scale)

p-value = 0.0001

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 5.1873 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.0001 < 0.05

we reject the null hypothesis of no trend

Therefore: **We reject the null hypothesis of no trend in favor of the alternative hypothesis (i.e. evidence of upward trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well CW-4B Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/15/98	12/1/98	3/25/99	6/24/99	9/28/99	12/13/99	3/13/00	4/25/01	4/9/02	4/1/03	6/8/04	6/20/05	12/7/05	3/28/06	9/27/06	3/29/07	9/25/07	3/25/08	9/16/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Result (mg/L)	0.021	0.0025	0.012	0.017	0.014	0.007	0.013	0.0126	0.0078	0.0091	0.0025	0.0025	0.0057	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	Count "+"	Count "-"
0.021		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	18
0.0025			+	+	+	+	+	+	+	+	0	0	+	0	0	0	0	0	0	9	0
0.012				+	+	-	+	+	-	-	-	-	-	-	-	-	-	-	-	4	12
0.017					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15
0.014						-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14
0.007							+	+	+	+	-	-	-	-	-	-	-	-	-	4	9
0.013								-	-	-	-	-	-	-	-	-	-	-	-	0	12
0.0126									-	-	-	-	-	-	-	-	-	-	-	0	11
0.0078										+	-	-	-	-	-	-	-	-	-	1	9
0.0091											-	-	-	-	-	-	-	-	-	0	9
0.0025												0	+	0	0	0	0	0	0	1	0
0.0025													+	0	0	0	0	0	0	1	0
0.0057														-	-	-	-	-	-	0	6
0.0025															0	0	0	0	0	0	0
0.0025																0	0	0	0	0	0
0.0025																	0	0	0	0	0
0.0025																		0	0	0	0
0.0025																			0	0	0
0.0025																			0	0	0
																				20	115
																				Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -95

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 19

t_1 = number of tied samples in the first group = 9

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 725.00

z_o = -3.4911

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = (P(Z > z_o) = 1 - z_p, where z_p from Table A-1 = 0.0002

p-value = 0.9998

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 3.4911 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.9998 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend at the 5% significance level (i.e. there is eveidence of a downward trend but not enough to over rule no trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-4D Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/9/98	12/1/98	3/24/99	6/23/99	9/28/99	12/13/99	3/14/00	9/21/00	4/24/01	9/12/01	4/11/02	9/26/02	3/28/03	12/18/03	6/9/04	12/9/04	6/21/05	12/7/05	3/29/06	9/27/06	3/27/07	9/25/07	3/24/08	9/16/08	12/11/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Result (mg/L)	1.83	15.3	1.784	6.774	11.25	6.81	2.35	3.07	2.0401	3.037	2.067	1.173	3.012	1.011	0.88	0.659	1.317	1.312	0.503	1.17	0.651	3.68	1.06	3.33	2.3	Count "+"	Count "-"
1.83		+	-	+	+	+	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-	+	-	+	+	13	11
15.3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	23
1.784				+	+	+	+	+	+	+	+	-	+	-	-	-	-	-	-	-	-	+	-	+	+	12	10
6.774					+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	19
11.25						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20
6.81							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19
2.35								+	-	+	-	-	+	-	-	-	-	-	-	-	-	+	-	+	-	5	13
3.07									-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	2	15
2.0401										+	+	-	+	-	-	-	-	-	-	-	-	+	-	+	+	6	10
3.037											-	-	-	-	-	-	-	-	-	-	-	+	-	+	-	2	13
2.067												-	+	-	-	-	-	-	-	-	-	+	-	+	+	4	10
1.173													+	-	-	-	+	+	-	-	-	+	-	+	+	6	7
3.012														-	-	-	-	-	-	-	-	+	-	+	-	2	10
1.011															-	-	+	+	-	+	-	+	+	+	+	7	4
0.88																-	+	+	-	+	-	+	+	+	+	7	3
0.659																	+	+	-	+	-	+	+	+	+	7	2
1.317																		-	-	-	-	+	-	+	+	3	5
1.312																			-	-	-	+	-	+	+	3	4
0.503																				+	+	+	+	+	+	6	0
1.17																					-	+	-	+	+	3	2
0.651																						+	+	+	+	4	0
3.68																							-	-	-	0	3
1.06																								+	+	2	0
3.33																									-	0	1
																										75	189
																										Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -114

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternate Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

$z_c = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 25

t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1833.33

z_c = -2.6391

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = $(P(Z > z_c) = 1 - z_p$, where z_p from Table A-1 = 0.0041

p-value = 0.9959

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_c is > $z_{0.95}$

Since absolute value z_c = 2.6391 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.9959 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend at the 5% significance level (i.e. there is eveidence of a downward trend but not enough to over rule no trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-5D Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/9/98	12/1/98	3/23/99	6/23/99	9/28/99	12/14/99	3/14/00	9/20/00	4/24/01	9/12/01	4/11/02	9/25/02	4/2/03	12/18/03	6/9/04	12/9/04	6/22/05	12/7/05	3/29/06	9/28/06	3/27/07	9/25/07	3/26/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Result (mg/L)	2.484	2.98	1.74	1.166	1.84	3.134	1.581	2.78	1.7073	4.4528	4.9869	1.19	1.66	2.1	2.5814	1.686	1.991	1.618	1.897	1.665	2.161	1.706	1.945	1.469	Count "+"	Count "-"
2.484		+	-	-	-	+	-	+	-	+	+	-	-	-	+	-	-	-	-	-	-	-	-	-	6	17
2.98			-	-	-	+	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	3	19
1.74				-	+	+	-	+	-	+	+	-	-	+	+	-	+	-	+	-	+	-	+	-	11	10
1.166					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	20	0
1.84						+	-	+	-	+	+	-	-	+	+	-	+	-	+	-	+	-	+	-	10	9
3.134							-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	2	16
1.581								+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	15	2
2.78									-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-	2	14
1.7073										+	+	-	-	+	+	-	+	-	+	-	+	-	+	-	8	7
4.4528											+	-	-	-	-	-	-	-	-	-	-	-	-	-	1	13
4.9869												-	-	-	-	-	-	-	-	-	-	-	-	-	0	13
1.19													+	+	+	+	+	+	+	+	+	+	+	+	12	0
1.66														+	+	+	+	-	+	+	+	+	+	-	9	2
2.1															+	-	-	-	-	-	+	-	-	-	2	8
2.5814																-	-	-	-	-	-	-	-	-	0	9
1.686																	+	-	+	-	+	+	+	-	5	3
1.991																		-	-	-	+	-	-	-	1	6
1.618																			+	+	+	+	+	-	5	1
1.897																				-	+	-	+	-	2	3
1.665																					+	+	+	-	3	1
2.161																						-	-	-	0	3
1.706																							+	-	1	1
1.945																								-	0	1
																									118	158
																									Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -40

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 0

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1625.33

z_o = -0.9674

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = (P(Z > z_o) = 1 - z_p, where z_p from Table A-1 = 0.165

p-value = 0.8350

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 0.9674 < 1.645

we fail to reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.8350 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend (i.e. No trend / stable)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-5S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/9/98	12/1/98	3/24/99	6/23/99	12/16/99	3/14/00	9/20/00	4/23/01	9/12/01	4/11/02	9/26/02	3/28/03	12/18/03	6/9/04	12/9/04	6/22/05	12/7/05	3/29/06	9/28/06	3/27/07	9/25/07	3/26/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
Result (mg/L)	3.06	4.796	0.116	2.413	5.14	2.03	2.41	1.6543	1.7	1.44	0.575	1.09	0.753	0.872	0.233	0.86	0.74	0.391	0.634	1.118	0.651	0.391	0.512	Count "+"	Count "-"
3.06		+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	20
4.796			-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	20
0.116				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	20	0
2.413					+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	18
5.14						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	18
2.03							+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	16
2.41								-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	16
1.6543									+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	14
1.7										-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14
1.44											-	-	-	-	-	-	-	-	-	-	-	-	-	0	13
0.575												+	+	+	-	+	+	-	+	+	+	-	-	8	4
1.09													-	-	-	-	-	-	-	+	-	-	-	1	10
0.753														+	-	+	-	-	-	+	-	-	-	3	7
0.872															-	-	-	-	-	+	-	-	-	1	8
0.233																+	+	+	+	+	+	+	+	8	0
0.86																	-	-	-	+	-	-	-	1	6
0.74																		-	-	+	-	-	-	1	5
0.391																			+	+	+	0	+	4	0
0.634																				+	+	-	-	2	2
1.118																					-	-	-	0	3
0.651																						-	-	0	2
0.391																							+	1	0
																								56	196
																								Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -140

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 23

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 1432.67

z_o = -3.6723

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.0001 (off scale)

p-value = 0.9999

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 3.6723 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.9999 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: We fail to reject the null hypothesis of no trend at the 5% significance level (i.e. there is eveidence of a downward trend but not enough to over rule no trend)

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-11S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	12/8/04	6/23/05	12/8/05	3/31/06	9/27/06	3/30/07	9/26/07	3/24/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10		
Result (mg/L)	2.752	3.42	3.73	3.73	3.66	3.54	3.4	3.72	3.05	3.21	Count "+"	Count "-"
2.752		+	+	+	+	+	+	+	+	+	9	0
3.42			+	+	+	+	-	+	-	-	5	3
3.73				0	-	-	-	-	-	-	0	6
3.73					-	-	-	-	-	-	0	6
3.66						-	-	+	-	-	1	4
3.54							-	+	-	-	1	3
3.4								+	-	-	1	2
3.72									-	-	0	2
3.05										+	1	0
											18	26
											Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -8

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18{n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]}

Where: n (number of samples) = 10

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 124.00

z_o = -0.6286

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.2648

p-value = 0.7352

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 0.6286 < 1.645

we fail to reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.7352 > 0.05

we fail to reject the null hypothesis of no trend

Therefore: **We fail to reject the null hypothesis of no trend (i.e. No trend / stable)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-15S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/17/98	3/25/99	12/16/99	3/13/00	9/21/00	4/26/01	9/11/01	4/10/02	3/31/03	12/16/03	6/8/04	12/8/04	12/7/05	3/30/06	9/28/06	3/29/07	9/26/07	3/24/08	9/16/08	9/17/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Result (mg/L)	0.103	0.027	0.073	0.037	0.04	0.0276	0.0286	0.025	0.014	0.0262	0.036	0.011	0.015	0.0463	0.0488	0.02	0.031	0.016	0.0416	0.0416	Count "+"	Count "-"
0.103		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19
0.027			+	+	+	+	+	-	-	-	+	-	-	+	+	-	+	-	+	+	11	7
0.073				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	17
0.037					+	-	-	-	-	-	-	-	-	+	+	-	-	-	+	+	5	11
0.04						-	-	-	-	-	-	-	-	+	+	-	-	-	+	+	4	11
0.0276							+	-	-	-	+	-	-	+	+	-	+	-	+	+	7	7
0.0286								-	-	-	+	-	-	+	+	-	+	-	+	+	6	7
0.025									-	+	+	-	-	+	+	-	+	-	+	+	7	5
0.014										+	+	-	+	+	+	+	+	+	+	+	10	1
0.0262											+	-	-	+	+	-	+	-	+	+	6	4
0.036												-	-	+	+	-	-	-	+	+	4	5
0.011													+	+	+	+	+	+	+	+	8	0
0.015														+	+	+	+	+	+	+	7	0
0.0463															+	-	-	-	-	-	1	5
0.0488																-	-	-	-	-	0	5
0.02																	+	-	+	+	3	1
0.031																		-	+	+	2	1
0.016																			+	+	2	0
0.0416																				0	0	0
																					83	106
																					Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = -23

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is a downward trend.

STEP 3. Test Statistics:

$z_o = S - sign(S) / V(S)^{0.5}$ Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and $V(S) = 1/18\{n(n-1)(2n+5) - [t_1(t_1-1)(2t_1+5)+[t_2(t_2-1)(2t_2+5)+\ldots$ up to $t_g]\}$

Where: n (number of samples) = 20

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 0

g = the number of tied sample groups

V(S) = 949.00

z_o = -0.7142

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = $(P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.2376

p-value = 0.7624

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 0.7142 < 1.645

we fail to reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.7624 > 0.05

we fail to reject the null hypothesis of no trend

Therefore:

We fail to reject the null hypothesis of no trend (i.e. No trend / stable)

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S,* dated February 2006

1/2 detection limit used for non-detects.

Table 1

Statistical Analysis of Groundwater Data (1998-2008)
Wellsville/Andover Landfill
Wellsville, New York

Monitoring Well MW-18S Total VOCs

COMPUTATIONS: Compute Statistic (S).

Date	6/15/98	12/1/98	3/26/99	6/28/99	9/29/99	12/20/99	3/21/00	9/21/00	4/30/01	9/11/01	4/12/02	9/25/02	4/3/03	12/17/03	6/11/04	12/9/04	6/23/05	12/6/05	3/28/06	9/27/06	3/28/07	9/25/07	3/26/08	9/16/08		
Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	20	21	22	23	24		
Result (mg/L)	0.024	0.026	0.018	0.038	0.04	0.049	0.087	0.139	0.097	0.132	0.155	0.123	0.134	0.157	0.117	0.167	0.197	0.155	0.099	0.152	0.097	0.0052	0.074	0.0141	Count "+"	Count "-"
0.024		+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	20	3
0.026			-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	19	3
0.018				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	19	2
0.038					+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	18	2
0.04						+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	17	2
0.049							+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	16	2
0.087								+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	14	3
0.139									-	-	+	-	-	+	-	+	+	+	-	+	-	-	-	-	6	10
0.097										+	+	+	+	+	+	+	+	+	+	+	0	-	-	-	11	3
0.132											+	-	+	+	-	+	+	+	-	+	-	-	-	-	7	7
0.155												-	-	+	-	+	+	0	-	-	-	-	-	-	3	9
0.123													+	+	-	+	+	+	-	+	-	-	-	-	6	6
0.134														+	-	+	+	+	-	+	-	-	-	-	5	6
0.157															-	+	+	-	-	-	-	-	-	-	2	8
0.117																+	+	+	-	+	-	-	-	-	4	5
0.167																	+	-	-	-	-	-	-	-	1	7
0.197																		-	-	-	-	-	-	-	0	7
0.155																			-	-	-	-	-	-	0	6
0.099																				+	-	-	-	-	1	4
0.152																					-	-	-	-	0	4
0.097																						-	-	-	0	3
0.0052																							+	+	2	0
0.074																								-	0	1
																									171	103
																									Total "+"	Total "-"

S = Total Number of "+" minus Total Number of "-" = 68

STEP 1. Null Hypothesis: H_0: There is no trend.

STEP 2. Alternative Hypothesis: H_A: There is an upward trend.

STEP 3. Test Statistics:

z_o = S - sign(S) / V(S)^0.5 Where: sign(S) = 1 if S > 0, 0 if S = 0, and -1 if S < 0

and V(S) = 1/18[n(n-1)(2n+5) - [$t_1(t_1-1)(2t_1+5)$+[$t_2(t_2-1)(2t_2+5)$+... up to t_g]]

Where: n (number of samples) = 24

t_1 = number of tied samples in the first group = 2

t_2 = number of tied samples in second group = 2

g = the number of tied sample groups

V(S) = 1623.33

z_o = 1.6629

STEP 4. a) Critical Value: From Table A-2, $z_{0.95}$ (critical value at 5% significance level) = 1.645

STEP 4. b) Probability Value: p-value = ($P(Z > z_o) = 1 - z_p$, where z_p from Table A-1 = 0.9518

p-value = 0.0482

STEP 5. a) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if absolute value of z_o is > $z_{0.95}$

Since absolute value z_o = 1.6629 > 1.645

we reject the null hypothesis of no trend

STEP 5. b) Conclusion: For testing the hypothesis, H_0 (no trend) against H_A - reject H_0 if p-value is less than significance level = 0.05.

Since p-value = 0.0482 < 0.05

we reject the null hypothesis of no trend

Therefore: **We reject the null hypothesis of no trend in favor of the alternative hypothesis (i.e. evidence of upward trend)**

Reference: *USEPA Data Quality Assessment: Statistical Methods for Practitioner EPA QA/G-9S*, dated February 2006

1/2 detection limit used for non-detects.

Table 2

2009 Proposed Monitoring Program
Wellsville/Andover Landfill

Location	Current Sampling Frequency	Proposed Sampling Frequency	Proposed Analyte List[1]
Groundwater			
CW-3A	Semiannual	NR	NR
CW-3B	Semiannual	Annual - Fall	Field, VOCs, Metals
CW-4A	Annual	NR	NR
CW-4B	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-15DA	Semiannual	NR	NR
MW-15S	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-17D	Annual	Annual - Fall	Field, VOCs, Metals
MW-17S	Annual	Annual - Fall	Field, VOCs, Metals
MW-18D	Annual	Annual - Fall	Field, VOCs, Metals
MW-18S	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-1D	Annual	NR	NR
MW-3D	Annual	Annual - Fall	Field, VOCs, Metals
MW-3S	Annual	Annual - Fall	Field, VOCs, Metals
MW-4D	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-5D	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-5S	Semiannual	Annual - Fall	Field, VOCs, Metals
MW-11S	Semiannual	Annual - Fall	VOCs
MW-16S	Semiannual	Annual - Fall	VOCs
Surface Water			
SWS-1	Annual	Annual	Field, VOCs, Metals, Wet Chem
Sediment			
SWS-1	Annual	NR	NR
Groundwater Cut-Off System			
MH-32	Semiannual	Annual - Fall	Field, VOCs, Metals, Wet Chem
MH-33	Semiannual	Annual - Fall	Field, VOCs, Metals, Wet Chem
Leachate			
LS-1	Semiannual	Annual - Fall	Field, VOCs, Metals

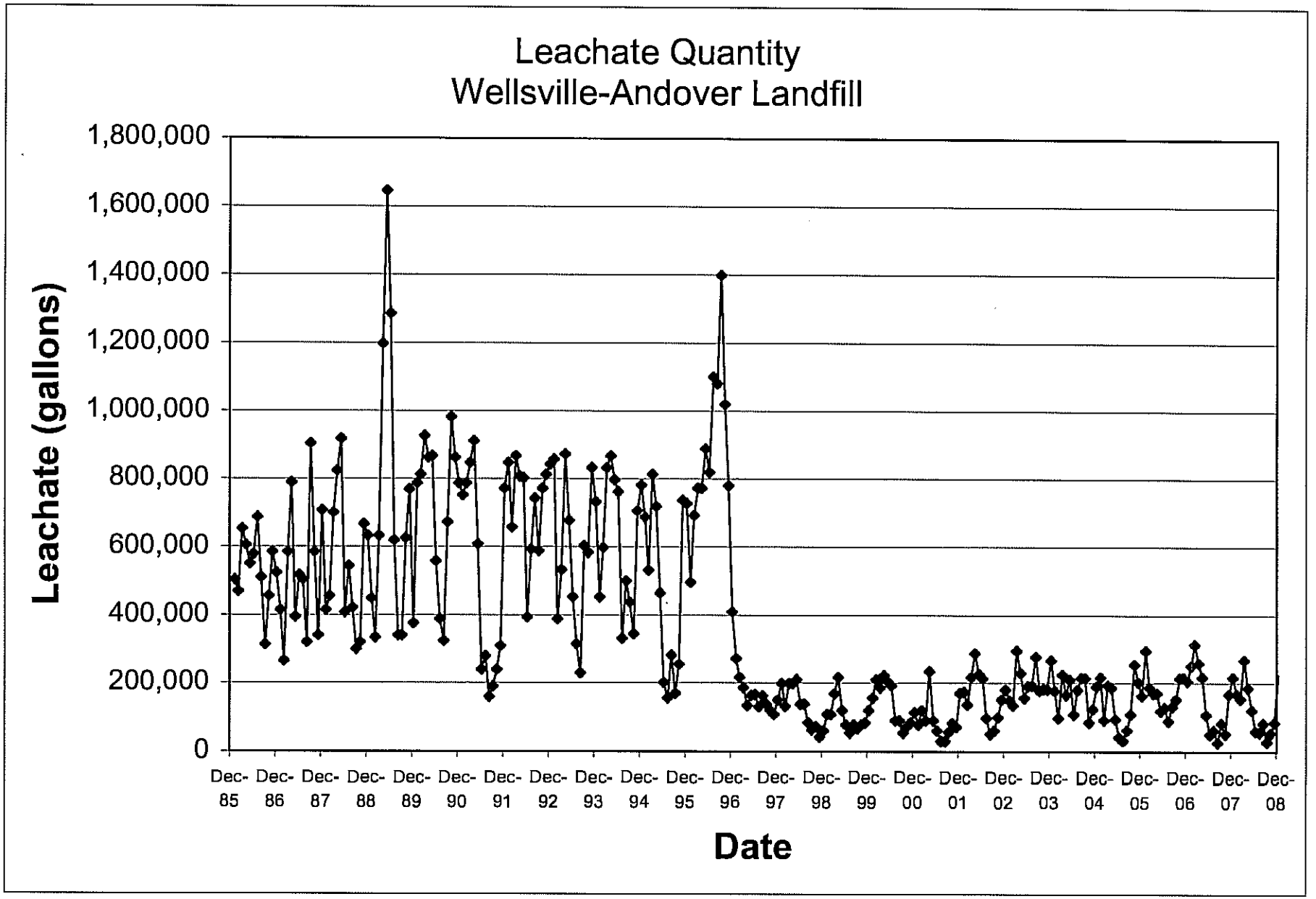
Location	Current Sampling Frequency	Proposed Sampling Frequency	Proposed Analyte List[1]
Residential Water Supply			
WAL-1	Every 3 Years	NR	NR
WAL-2	Semiannual	Annual	Metals
WAL-3	Every 3 Years	NR	NR
WAL-4	Every 3 Years	NR	NR
WAL-5	Semiannual	Annual	VOCs, Metals
WAL-6	Every 3 Years	NR	NR
WAL-7	Every 3 Years	NR	NR
WAL-8	Every 3 Years	NR	NR
WAL-9	Every 3 Years	NR	NR
WAL-10	Every 3 Years	NR	NR
WAL-11	Every 3 Years	NR	NR
WAL-12	Every 3 Years	NR	NR
WAL-13	Every 3 Years	NR	NR
WAL-14	Every 3 Years	NR	NR
WAL-15	Every 3 Years	NR	NR
WAL-16	Every 3 Years	NR	NR
WAL-17	Every 3 Years	NR	NR
WAL-18	Every 3 Years	NR	NR
WAL-19	Semiannual	Semiannual	VOCs[2]
WAL-20	Every 3 Years	NR	NR

Notes

NR - Not required unless site conditions warrant (i.e., significant leachate breakout, leachate spill, etc.)

[1] - Field = Field Parameters (pH, Conductivity, Dissolved Oxygen, Turbidity, Oxidation Reduction Potential)
- VOCs = Volatile Organic Compounds method 8260
- Metals = As, Ba, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, P, Se, Na, Z
- Wet Chem = Nitrate Nitrogen and Total Dissolved Solids

[2] WAL-19 tested for VOCs prior to filters, between filters and after filters


Leachate Quantity
Wellsville-Andover Landfill
Leachate (gallons)
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Dec-85
Dec-86
Dec-87
Dec-88
Dec-89
Dec-90
Dec-91
Dec-92
Dec-93
Dec-94
Dec-95
Dec-96
Dec-97
Dec-98
Dec-99
Dec-00
Dec-01
Dec-02
Dec-03
Dec-04
Dec-05
Dec-06
Dec-07
Dec-08
Date

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7220; **Fax** (716) 851-7226
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

May 12, 2009

William Whitfield
Director of Public Works
Village of Wellsville
200 Bolivar Road
Wellsville, New York 14895

Dear Mr. Whitfield:

Wellsville-Andover Landfill
Site hw902004
Wellsville, Alleghany County

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have reviewed the Site Monitoring Evaluation and Proposed Revised Monitoring Plan dated April 3, 2009, for the Wellsville-Andover Landfill site. This plan recommends modification of the environmental sampling for the landfill and the surrounding residences. Based on this review, the following determinations regarding the sampling frequency have been made.

Groundwater Monitoring Well CW-3A

This overburden monitoring well has increasing Volatile Organic Comounds (VOC) contamination and should be retained for annual sampling for field, VOC and metal analytes. It monitors a different interval of the overburden formation than the neighboring CW-3B monitoring well. The location is adjacent and downgradient from the landfill and could be an important sentinel well if the groundwater flow patterns should change.

Groundwater Monitoring Wells CW-3B, CW-4B, MW-15S, MW-17D, MW-17S, MW-18D, MW-18S, MW-3D, MW-3S

We concur with the proposed annual frequency and the proposed analyte list for these monitoring wells.

Groundwater Monitoring Well CW-4A

This monitoring well should be retained for annual sampling since it monitors a different interval of the overburden formation than the neighboring CW-4B. The location is adjacent and downgradient from the landfill and could be an important sentinel well if the groundwater flow patterns should change.

Groundwater Monitoring Well MW-15DA

This bedrock well has not been sampled following the remedial action since it has been dry. We concur with the removal from the required sampling list. This monitoring well should be decommissioned.

Groundwater Monitoring Well MW-1D

This monitoring well can also be decommissioned. MW-3S and MW-3D can both function as the upgradient monitoring wells. We concur with the deletion from the sampling schedule. This monitoring well is located at too great a distance to be useful as an upgradient well.

Groundwater Monitoring Wells MW-4D, MW-5D, MW-5S, MW-11S and MW-16S

These monitoring wells should all be sampled annually for the field, VOCs and metals parameters. In addition, there should be a sampling round in the spring for VOCs only. The VOCs in MW-4D, MW-5D, MW-5S and MW-11S are of concern to the Departments. In addition, groundwater concentrations in the sentinel landfill well MW-16 is of particular concern, since it is the furthest downgradient monitoring well from the landfill. If MW-16 becomes contaminated, there should be an assessment of both the remedy and the downgradient monitoring and residential sampling.

Surface Water and Sediment Sampling – SWS-1

Since these monitoring points are potential exposure points, they should be monitored annually for the field, VOCs and metals parameters. In addition the surface water and sediment sampling should be sampled for the full wet chemistry list that it currently in effect.

Groundwater Cut-Off System MH-32, MH-33 and Leachate LS-1

We concur with the proposed sampling frequency and analyte list for these sampling points.

Recommendation to discontinue sampling of several residential wells

We concur with the recommendation to discontinue sampling at the following residential wells currently within the sampling program:

WAL-1:Shettine Residence; WAL-16 Cornell Residence

No site-related constituents have been detected in these wells at concentrations that exceed NYSDOH standards for public drinking water supplies. Additionally, given that the WAL-1 residence is currently unoccupied and the WAL-16 residence is significantly distant from the landfill, we agree with the recommendation to discontinue sampling of these wells.

WAL-3: Gephart Residence; WAL-4: Hanabach Residence; WAL-8: Dodge Residence; WAL-9: Greene Residence; WAL-10: Schettine Residence; WAL-14 Carl Residence; WAL-18: Geffer Residence; WAL-13: Wispel Residence; WAL-15: Kelly Residence

Sodium has been detected in these residential wells at concentrations that exceed NYSDOH public drinking water standards. Standards for sodium were originally based on aesthetic and taste properties, and the NYSDOH public drinking water supply guideline for people on severely restricted sodium diet is no more than 20 mg/L of sodium. If concerned about sodium intake, the homeowner may wish to use an alternate supply of water for drinking and cooking purposes. While semi-volatile organic compounds have been detected sporatically in several sampling events, these compounds were detected at concentrations significantly lower than the NYSDOH public drinking water standards. Based on this information, we agree with the recommendation to discontinue sampling of these wells.

WAL-6: Cimino Residence

Iron and manganese have been detected at concentrations that exceed NYSDOH public drinking water standards in two sampling events. However, no compounds were detected at levels which exceed NYSDOH drinking water standards in the last three of the six sampling events completed. Based on this information, we agree with the recommendation to discontinue sampling of this well.

WAL-11: Urban Residence

Iron has been historically detected in WAL-11 at concentrations that exceed NYSDOH public drinking water standards. However, levels of iron detected in the last of the twelve sampling events completed did not exceed drinking water standards. Standards for iron were based on aesthetic properties and were set to prevent problems such as poor taste, odor and fixture staining. Given this information, we concur with the recommendation to discontinue sampling of this well.

WAL-12: Blaske Residence

Iron and sodium have been detected in this residential well during the three completed sampling events at concentrations that exceed NYSDOH public drinking water standards. Standards for sodium and iron were based on aesthetic and taste properties, and the NYSDOH public drinking water supply guideline for people on severely restricted sodium diet is no more than 20 mg/L of sodium. If concerned about sodium intake, the homeowner may wish to use an alternative supply of water for drinking and cooking purposes. Based on this information, we concur with the recommendation to discontinue sampling of this well.

WAL-17: Meisenzhal Residence

Iron and sodium have been detected at WAL-17 at concentrations that exceed NYSDOH public drinking water standards. Standards for sodium and iron were based on aesthetic and taste properties, and the NYSDOH public drinking water supply guideline for people on a severely restricted sodium diet is no more than 20 mg/L of sodium. If concerned about sodium intake, the homeowner may wish to use an alternate supply of water for drinking and cooking purposes. Based on this information, we agree with the proposal to discontinue sampling of this well.

WAL-20: Fanton Residence

Current sampling frequency: every three years
Proposed sampling frequency: discontinue sampling

Three sampling events have been completed since the granulated activated carbon filter system was removed from WAL-20 in January of 2007 (subsequent to placement of a new drinking water well in 2005). With the exception of sodium, no site-related constituents have been detected in WAL-20 at levels that exceed applicable standards. Additionally, this well is located a substantial distance from the landfill. Based on this information, we agree with the recommendation to discontinue sampling of this well.

Recommendation to modify sampling frequency

We concur with the recommendation to modify the sampling frequency at the following residential wells currently within the sampling program:

WAL-2: Rossini Residence

Inorganic compounds (metals), including sodium, iron and manganese have historically been detected in WAL-2 at concentrations that exceed NYSDOH public drinking water standards. We understand that this residence is adjacent to the Wellsville-Andover landfill, is occupied seasonally and that the homeowner uses bottled water as a source of potable water while in-residence. Given this information, we concur with the recommendation of annual sampling for metals compounds. This is reduced from semi-annual sampling for inorganic compounds.

WAL-5: Ormsby Residence

Volatile organic compounds, including cis-1,2-dichloroethene and trichloroethene and metals compounds have been detected at low concentrations (below NYSDOH drinking water standards) in WAL-5. The concentrations of these compounds has remained relatively consistent over semi-annual sampling events completed from 1998 to 2002 and have not been detected in the last twelve sampling events. Based on this information, we concur with the recommendation to reduce the sampling frequency from semi-annual to annual sampling.

WAL-19: LaDue Residence

We concur with the recommendation to continue semi-annual sampling.

Although a review of the available data supports the proposed modifications to the sampling program, it should be noted that, should conditions change additional sampling or re-sampling of the environmental media may be warranted and requested by either NYSDOH or NYSDEC.

If you have any questions, please contact me at 716-851-7220.

Sincerely,

Linda C. Ross

Linda C. Ross
Project Manager
Division of Environmental Remediation

LCR/tml

cc: Mr. Jonathan Brandes, On-Site Technical Services, Inc
Ms. Tamara Girard, NYSDOH

Jon Brandes

From: "Linda Ross" <lcross@gw.dec.state.ny.us>
To: "Jon Brandes" <Jonb@on-sitehs.com>
Cc: "Tamara Girard" <tsg01@health.state.ny.us>; "William Whitfield" <billwhitfield@wellsvilleny.com>
Sent: Friday, May 22, 2009 1:15 PM
Attach: MON PROGRAM REV Table.xls
Subject: Fwd: Wellsville Andover Landfill

Jon, I agree with your proposal below in the email and the attached monitoring schedule. Please continue with the landfill gas monitoring, since they are potential exposure points. Thanks. L.

Linda C. Ross
Engineering Geologist 1
New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, NY 14203-2999
lcross@gw.dec.state.ny.us
office: 716. 851. 7220
fax: 716. 851. 7226

>>> "Jon Brandes" <Jonb@on-sitehs.com> 5/22/2009 11:59 AM >>>
Linda,

Based on your response to the site evaluation and proposed monitoring program, we have revised the monitoring program table - please see attached. We will follow this schedule starting with the fall event. One item that was not commented on is the request to discontinue landfill gas monitoring. Please provide comment.

Also I propose the following for reporting:
1) The spring 2009 sampling event was completed following the old monitoring schedule and the typical report will be completed.
2) For each future spring and fall event a letter report will be prepared once analytical results are received. The letter report will present the results of the monitoring event.
3) A annual report each year similar to previous annual reports.

Thanks and have a great holiday weekend!!

Jon Brandes, P.G.
Senior Geologist
On-Site Technical Services, Inc.
72 Railroad Ave
Wellsville, NY 14895
Phone: 585-593-1824
Fax: 585-593-7471

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Brad Mathison — Date: 12/31/12

Weather: Partly cloudy — Temperature: 32

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	NONE
	Subsidence/ponding	Delineate, fill, and revegetate.	NONE
	Erosion/gullies	Determine cause, grade, and vegetate.	NONE
	Slope stability	Check for erosion, slippage, slope failure.	NONE
	Vegetation	Check for areas of weak/no vegetation, revegetate.	NONE
		Mow semiannually.	Mowed 10/12
		Remove seedlings and trees from cover system and drainage ways.	NONE
	Vectors	Check for burrows and backfill with clean soil.	NONE
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	Oct, Nov, Dec 314530
	Pump stations	Check pump operation.	OK Pump 2 shutting Down
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	Performed By Onsite Testing
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	11
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	11

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Brad Matis — To — Date: 12/31/12

Weather: Partly Sunny — Temperature: 32°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	OK
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	NONE OK
	Culverts	Check condition and for blockage and erosion.	NONE
	Detention ponds	Check outlet structure for blockage and general condition.	
		Check for siltation/silt buildup, erosion, condition of vegetation and embankments.	OK
Groundwater monitoring system	Sampling wells	See Section 4.	Performed By On-Site
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	OK
Facility access system	Roads	Check condition. Check for erosion, potholes.	NONE
	Access gate	Check condition. Lubricate lock.	OK
Other		Comments	Pump #2 Shutting Down Ed Riley To make Repairs 1/2/12

Signed: Bradley J. Matis

Date: 12/31/12

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Brad Matison To — Date: 9/27/12

Weather: Sunny... Wind E @ 6 MPH — Temperature: 68°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	ok
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	ok
	Culverts	Check condition and for blockage and erosion.	ok
	Detention ponds	Check outlet structure for blockage and general condition.	ok
		Check for siltation/silt building, erosion, condition of vegetation and embankments.	ok
Groundwater monitoring system	Sampling wells	See Section 4.	Monitoring well to be decommissioned
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	ok
Facility access system	Roads	Check condition. Check for erosion, potholes.	ok
	Access gate	Check condition. Lubricate lock.	ok
Other		Comments	

Signed: Brad J. Matison

Date: 10/5/12

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Brad Matison Date: 9/27/12

Weather: Sunny Wind E @ 6MPH Temperature: 68°

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	OK
	Slope stability	Check for erosion, slippage, slope failure.	OK
	Vegetation	Check for areas of weak/no vegetation, revegetate.	OK
		Mow semiannually.	OCT 2011
		Remove scrubs and trees from cover system and drainage ways.	OK
	Vectors	Check for burrows and backfill with clean soil.	OK
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	July, Aug, Sept 13,410
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	OK
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	Performed By On-Site
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	Performed by On-Site
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	Performed by On-Site

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: BRAD WATKINSON Date: 6/28/12

Weather: Sunny Wind NNW 7 MPH Temperature: 82° F

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	OK
	Slope stability	Check for erosion, slippage, slope failure.	OK
	Vegetation	Check for areas of weak/no vegetation, revegetate.	OK
		Mow semiannually.	OCT 2011
		Remove scrubs and trees from cover system and drainage ways.	OK
	Vectors	Check for burrows and backfill with clean soil.	OK
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	April, May, June 378, 345
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	Performed By ON-Site
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	Performed By ON-Site
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	Performed By ON-Site

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: BRAD MATTISON Date: 6/28/12

Weather: Sunny, Wind NNW 7mpH Temperature: 82°

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	OK
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	OK
	Culverts	Check condition and for blockage and erosion.	OK
	Detention ponds	Check outlet structure for blockage and general condition.	OK
		Check for siltation/silt building, erosion, condition of vegetation and embankments.	OK
Groundwater monitoring system	Sampling wells	See Section 4.	Monitoring well stick need repair - ON site - working solution.
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	OK
Facility access system	Roads	Check condition. Check for erosion, potholes.	OK
	Access gate	Check condition. Lubricate lock.	OK
Other		Comments	Laterals flushed 3 Manholes CLEANED 6/28/12 & 7/1/12

Signed: BRAD MATTISON

Date: 6/28/12

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: Bill Whitfield / Brad Matisek Date: 3/30/12

Weather: Sunny 38° Temperature: 38°

Area	Item	Action	Comments
Cover system	Seeps	Delineate, sample, evaluate.	OK
	Subsidence/ponding	Delineate, fill, and revegetate.	OK
	Erosion/gullies	Determine cause, grade, and vegetate.	OK
	Slope stability	Check for erosion, slippage, slope failure.	OK
	Vegetation	Check for areas of weak/no vegetation, revegetate.	OK
		Mow semiannually.	OCT 2011
		Remove scrubs and trees from cover system and drainage ways.	OK
	Vectors	Check for burrows and backfill with clean soil.	OK
Leachate collection and storage system	USTs	Check leachate levels, check/test leak detection system and auto dialer; check for sediment in bottom of tanks.	Jan, Feb, March 507795
	Pump stations	Check pump operation.	OK
		Check float operation. Perform manufacturer's recommended maintenance. Operate/cycle valves. Check sump for floating debris and sediments.	OK
	Forcemain	Check for leaks.	
	Laterals and trunk line	Check for and record VOCs at each manhole and cleanout; check for line blockage visually; lubricate locks.	Performed by on-site
	Groundwater cutoff manholes	Collect and analyze sample of liquid in cutoff trench. Note which line (surface drainage or LCS) is plugged.	Performed by on-site
Gas venting system	Odors	Check for and record VOCs and methane (explosimeter) upwind, at each vent, and at perimeter of property. Check physical condition of vent and screen.	Performed by on-site

Figure 5-3

QUARTERLY INSPECTION AND MAINTENANCE CHECKLIST
WELLSVILLE/ANDOVER LANDFILL SITE
NYSDEC SITE NO. 9-02-004

Inspector: R. H. Whitfield / Brad Matise — Date: 3/30/12

Weather: Sunny — Temperature: 38

Area	Item	Action	Comments
Stormwater system	Ditches and swales	Check for pooling, erosion, excessive vegetation, and weak vegetation.	ok
	Cover system drainage	Check for cover soils that are excessively wet, slope failure without evidence of fill subsidence. Check condition of geocomposite drainage layer at cover perimeter.	ok
	Culverts	Check condition and for blockage and erosion.	ok
	Detention ponds	Check outlet structure for blockage and general condition.	ok
		Check for siltation/silt buildup, erosion, condition of vegetation and embankments.	ok
Groundwater monitoring system	Sampling wells	See Section 4.	Mon well # hit by mower. Minor damage above ground. Need To Investigate & Repair
		Check condition of caps, locks, surface seals, and markings. Lubricate locks.	ok
Facility access system	Roads	Check condition. Check for erosion, potholes.	ok
	Access gate	Check condition. Lubricate lock.	ok
Other		Comments	Laterals schedule FOR cleaning spring 2012

Signed: Brad by S Matise

Date: 3/30/12

WAL LEACHATE LATERAL CLEANING

LATERAL #	ASSOCIATED MANHOLE	INITIAL MANHOLE OBSERVATIONS	DATE FLUSHED	APPROX. FLUSH GALS	DATE MANHOLE CLEANED	GENERAL OBSERVATIONS
L-16	LEACHATE SUMP	PUMP PIT SHOWED NO DEBRIS AND NORMAL RANGE OF WATER.	6/28/2012	500		GOOD FLOW TO START WITH DIRTY WATER THEN CLEANING UP SOME.
L-17	MH-6	SOME SMALL DEBRIS IN MANHOLE WITH BROWNISH STANDING WATER.	6/28/2012	500		DIRTY BROWN WATER AT FIRST THEN CLEARING UP WITH GOOD FLOW.
L-19	MH-7	SOME SMALL DEBRIS IN MANHOLE WITH BROWNISH STANDING WATER.	6/28/2012	500		DIRTY BROWN WATER AT FIRST THEN CLEARING UP WITH GOOD FLOW.
L-21	MH-8	HEAVY SLUDGE AND SOME SOLIDS IN MANHOLE WITH BROWNISH STANDING WATER.	6/28/2012	500		DIRTY BROWN WATER AT FIRST THEN CLEARING UP WITH GOOD FLOW.
L-23	MH-9	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	6/28/2012	500		DIRTY BROWN WATER AT FIRST THEN CLEARING UP WITH GOOD FLOW.
L-25	MH-10	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	6/28/2012	500		WATER STARTED AT A SLOW PACE WITH BROWNISH WATER AND THEN PICKED UP INTO A FULL PIPE WITH GOOD FLOW CLEARING UP.
L-27	MH-11	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	6/28/2012	500		SLOW UNEVEN FLOW WITH BROWNISH WATER AND SOME DEBRIS FROM PIPE.
L-29	MH-12	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	6/28/2012	500		NO FLOW
L-31	MH-13	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	6/28/2012	500		DIRTY BROWN WATER AT FIRST THEN CLEARING UP WITH GOOD FLOW.

PERSONNEL ON SITE (BRAD MATTISON V/W, DAN GARDNER V/W, JOSH FRY V/W, JOHN FLEISCHMAN WELLSVILLE FIRE DEPT.) WEATHER (82 DEGREES F, SUNNY, WIND NNW @ 7 MPH)

WAL MANHOLE CLEANING

MH #	INITIAL OBSERVATIONS	OBSERVATIONS	DATE CLEANED
MH-6	SOME SMALL DEBRIS IN MANHOLE WITH BROWNISH STANDING WATER.	REMOVED 4" OF LIGHT SOLIDS	7/2/2012
MH-7	SOME SMALL DEBRIS IN MANHOLE WITH BROWNISH STANDING WATER.	REMOVED 6" TO 8" OF SLUDGE	7/2/2012
MH-8	HEAVY SLUDGE AND SOME SOLIDS IN MANHOLE WITH BROWNISH STANDING WATER.	REMOVED 4" OF LIGHT SOLIDS	7/2/2012
MH-9	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	REMOVED 2" TO 3" LIGHT SOLIDS	7/2/2012
MH-10	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	REMOVED 4" OF LIGHT SOLIDS	7/2/2012
MH-11	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	REMOVED 4" OF LIGHT SOLIDS	7/2/2012
MH-12	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	REMOVED 8" OF HEAVY THICK SLUDGE	7/2/2012
MH-13	STANDING BROWNISH WATER WITH LIGHT DEBRIS IN MANHOLE.	REMOVED 8" OF HEAVY THICK SLUDGE	7/2/2012

*** PERSONNEL ON SITE BRAD MATTISON V/W ,WAYNE STONMETZ V/W , BILL WHITFEILD V/W , JEFF PEET DAN SHEA SEPTIC SERVICE

*** WEATHER SUNNY 80 DEGREES F WIND NNW @ 11 MPH

Jon Brandes

From: David Szymanski [dsszyman@gw.dec.state.ny.us]
Sent: Monday, September 17, 2012 3:24 PM
To: jonb@on-sitehs.com
Cc: billwhitfield@wellsvilleny.com; Brad Mattison
Subject: Re: Wellsville Andover Landfill
Attachments: cp43mwdecomm[1].pdf

Jon -

Based on your interpretation of groundwater flow, it would be acceptable to the Department if you decommission PZ-3R. Attached is DEC Commissioner's Policy CP-43, which details methods and reporting requirements for groundwater monitoring well decommissioning. Please ensure the Department is provided with decommissioning documentation which you may append to your next Periodic Review Report submission.

Please call me if you would like to discuss this work.

Best Regards
- ds

David Szymanski, EPS-1
NYSDEC - Region 9, Buffalo
Div. of Environmental Remediation
(716) 851-7220
(716) 851-7226 fax

>>> "Jon Brandes" <jonb@on-sitehs.com> 9/12/2012 8:13 AM >>>
David,

As noted in the 2011 annual report, monitoring well MW-5D and piezometer PZ-3R were damaged during the site mowing activities. Monitoring well MW-5D protective casing was bent. The casing has subsequently been straightened and the well is currently serviceable. Piezometer PZ-3R is located within the footprint of the landfill and the protective casing and well have been partially pulled from the ground. This piezometer is only used for measurement of groundwater levels and is not part of the site sampling network. This site has been in O&M for approximately 15 years and site groundwater levels have been demonstrated to be extremely stable over this time period showing only expected seasonal fluctuations. There are five additional piezometer within the landfill and several monitoring wells around the landfill perimeter. Groundwater levels can be adequately monitored without piezometer PZ-3R. Please see attached potentiometric maps from 2010 and 2011 with and without PZ-3R, respectively. Therefore we propose that PZ-3R be appropriately decommissioned including properly sealing the geosynthetic cap at the piezometer location.

If you require additional information or wish to discuss this matter please let me know. If this proposal is acceptable, a detailed work plan will be developed and this work will be scheduled for this fall.

Best Regards,

Jon Brandes, P.G.

Senior Geologist

On-Site Technical Services

72 Railroad Avenue

Wellsville, New York 14895

ph: 585-593-1824

fax: 585-593-7471

10/17/12: Damaged Piezometer PZ-3R with protective casing and cover soil removed

10/17/12: Liner repair in progress at PZ-3R location

10/17/12: Completed liner patch at PZ-3R location

10/17/12: Former PZ-3R location with well abandonment complete

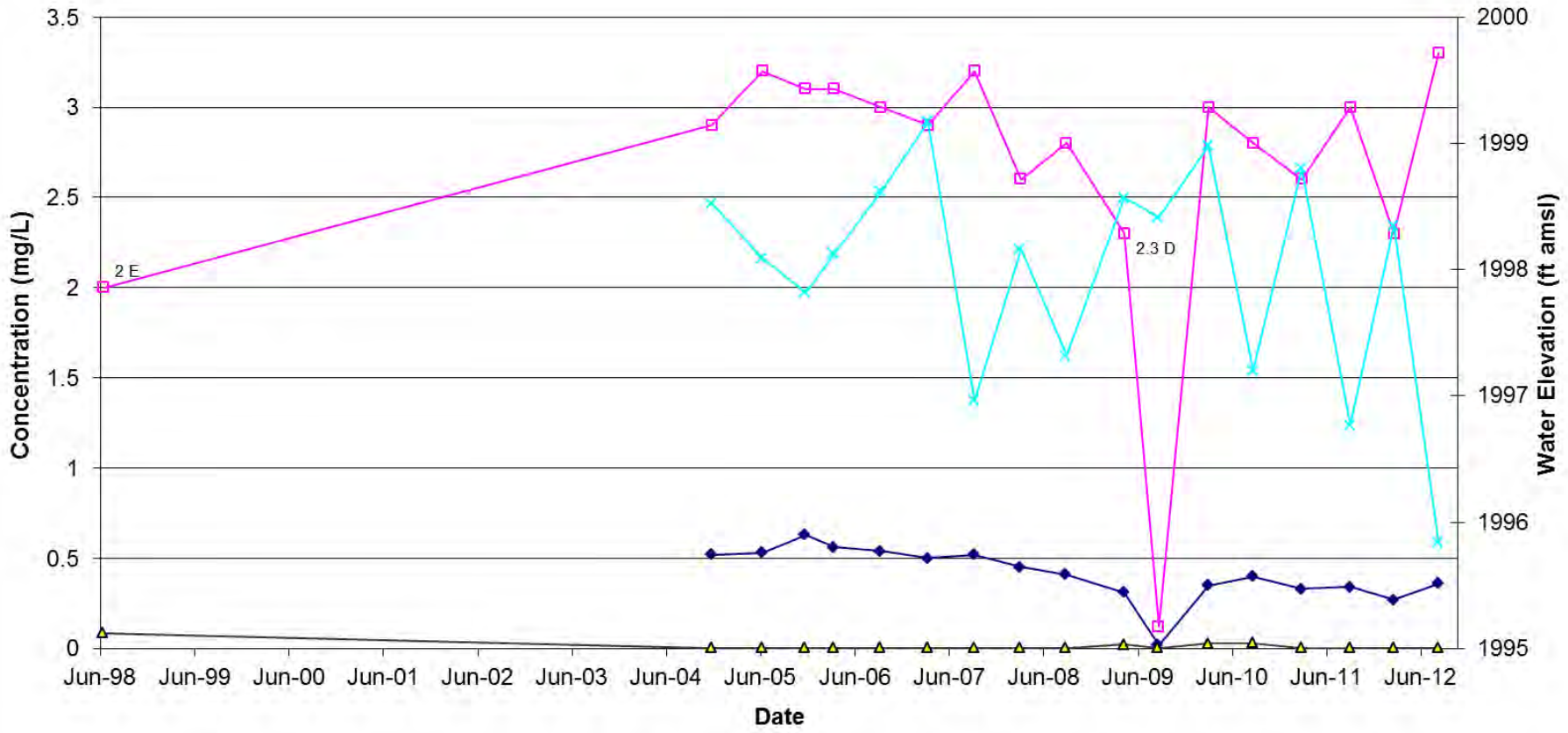
10/17/12: Damaged gas vent V-12

10/17/12: Replaced gas vent V-12 coupling

10/17/12: Liner repair complete at gas vent V-12

10/17/12: Gas vent V-12 repairs complete

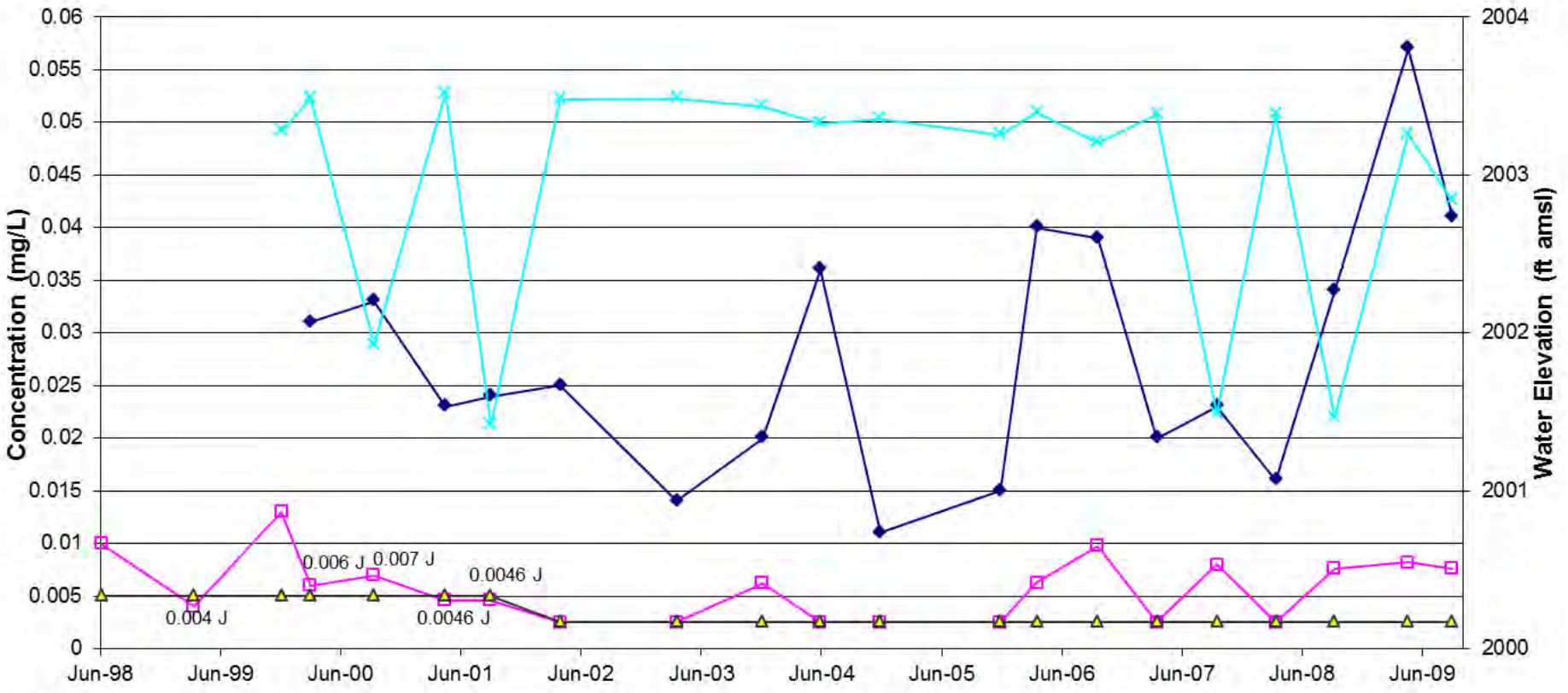
MW-11S VOCs



NOTES:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. **E** - Results are greater than the calibration range fo the instrument used for analysis.
4. Vinyl chloride results are non-detect with an exception of 6/17/1998.
5. Flagged data is labeled on the graph as appropriate.
6. **D** - This flag indicates a result from a diluted sample.

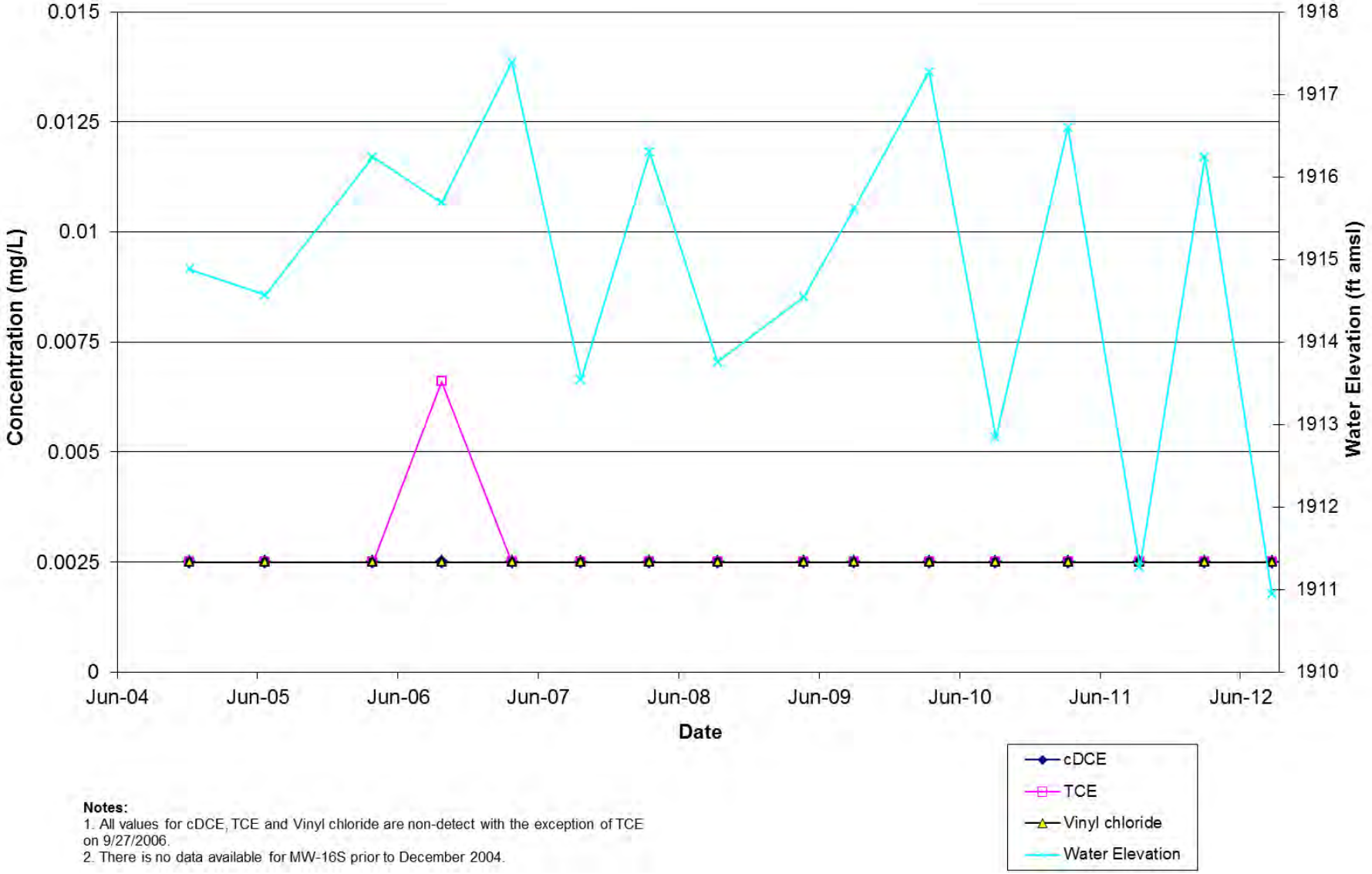
MW-15S VOCs



Notes:

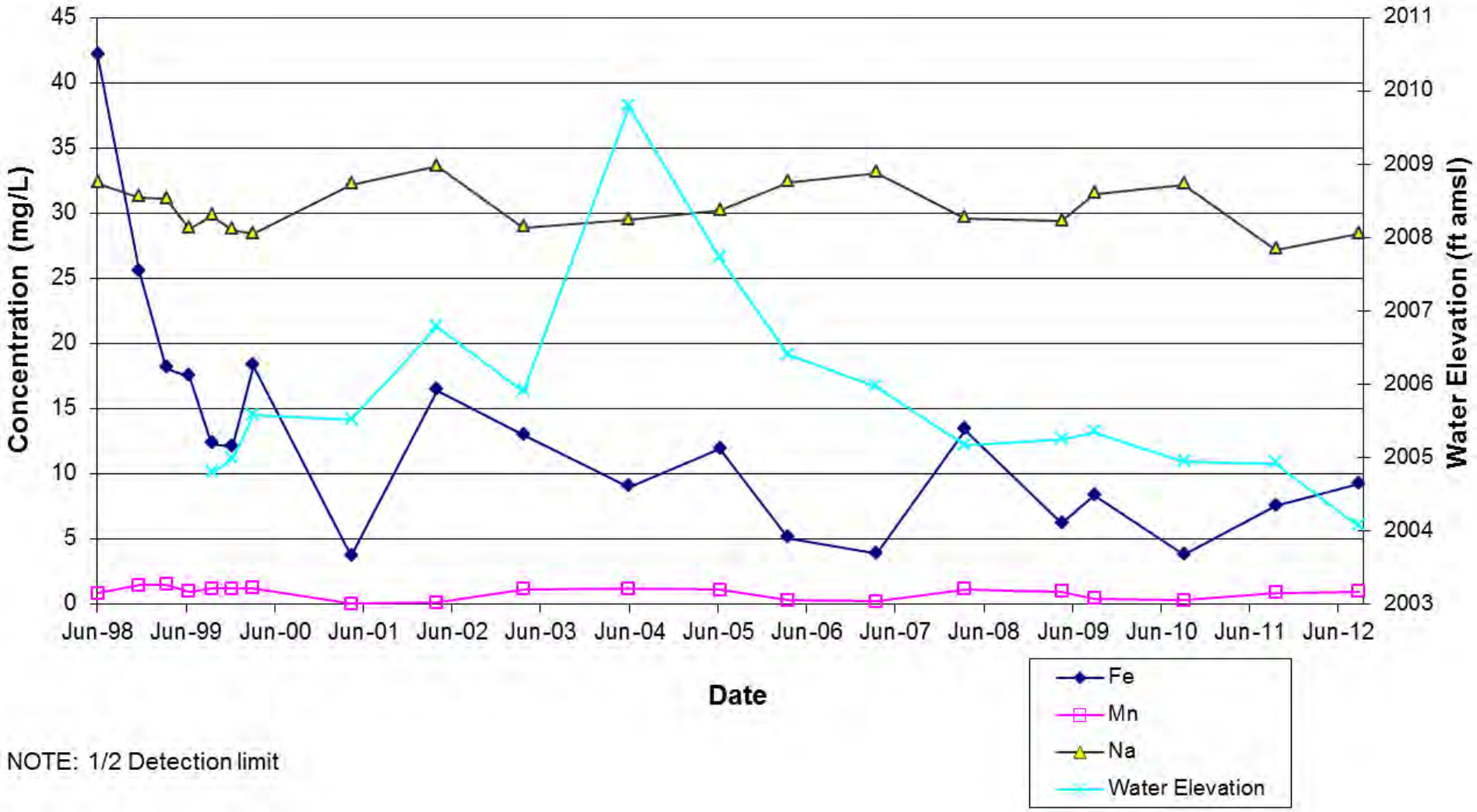
1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. **J** - Estimated value.
4. All Vinyl chloride and a majority of TCE results are non-detect.
5. Data with flag labeled on graph as appropriate.

MW-16S VOCs



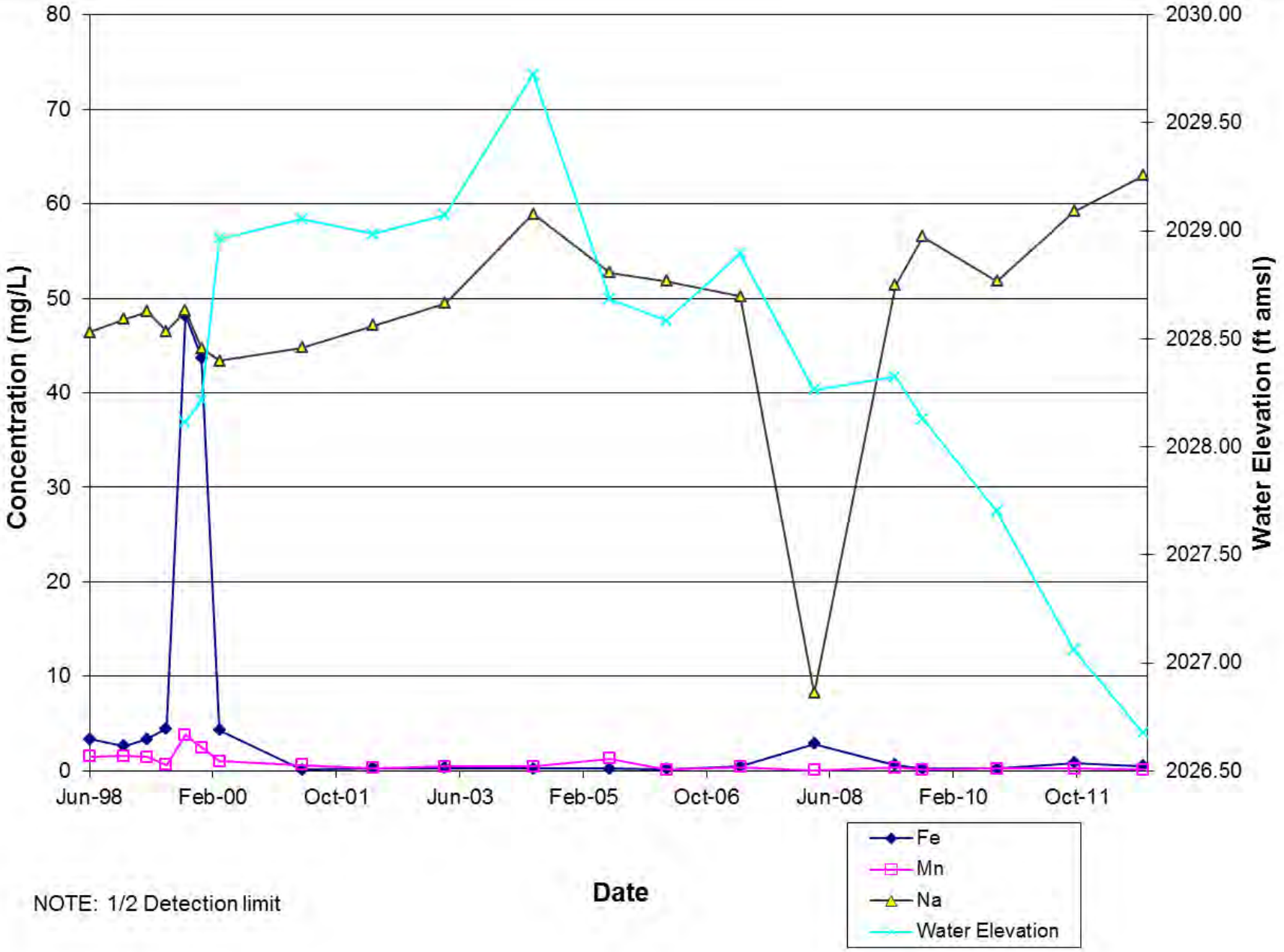
Notes:
1. All values for cDCE, TCE and Vinyl chloride are non-detect with the exception of TCE on 9/27/2006.
2. There is no data available for MW-16S prior to December 2004.

MW-17D Metals

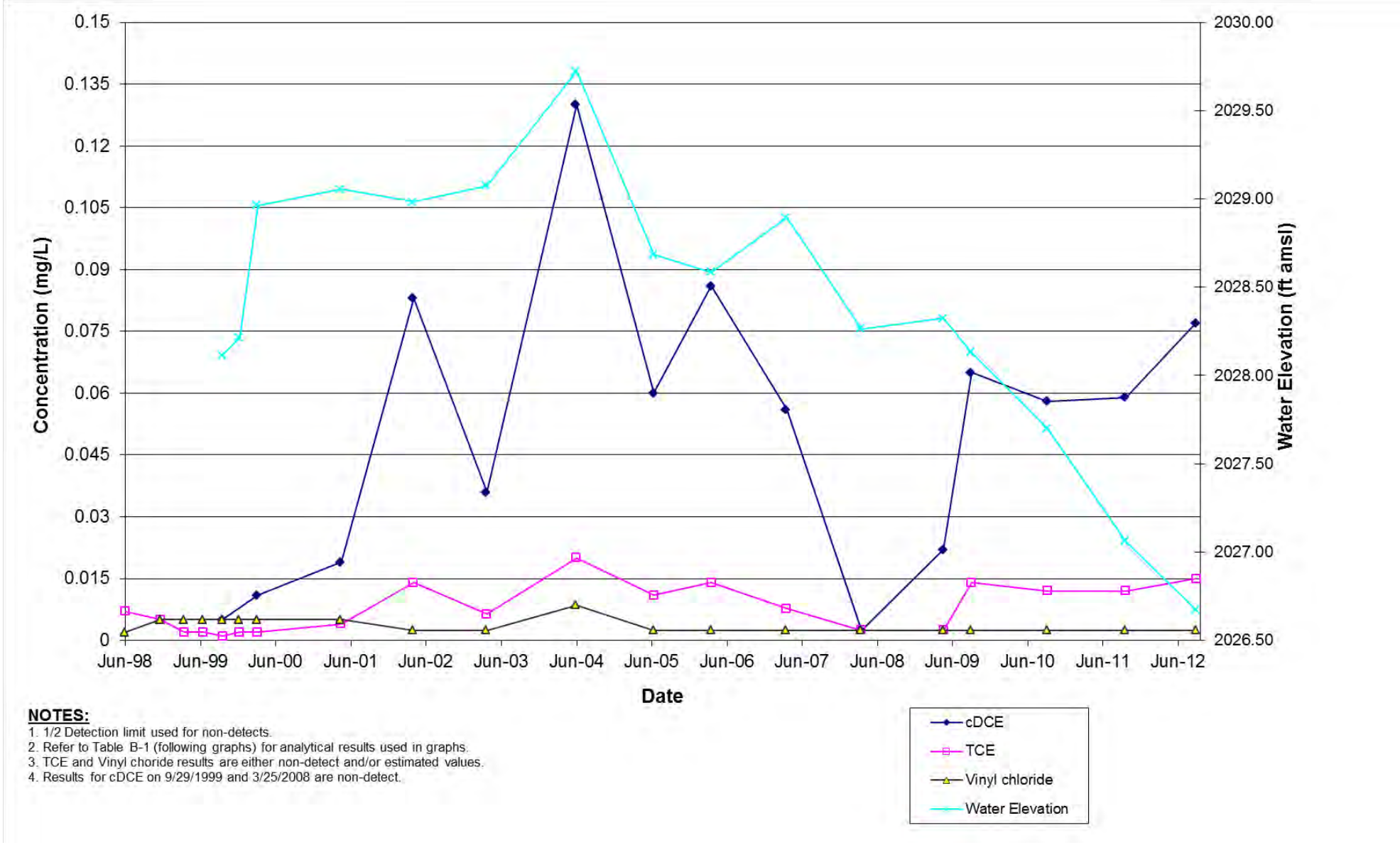


NOTE: 1/2 Detection limit

MW-17S Metals



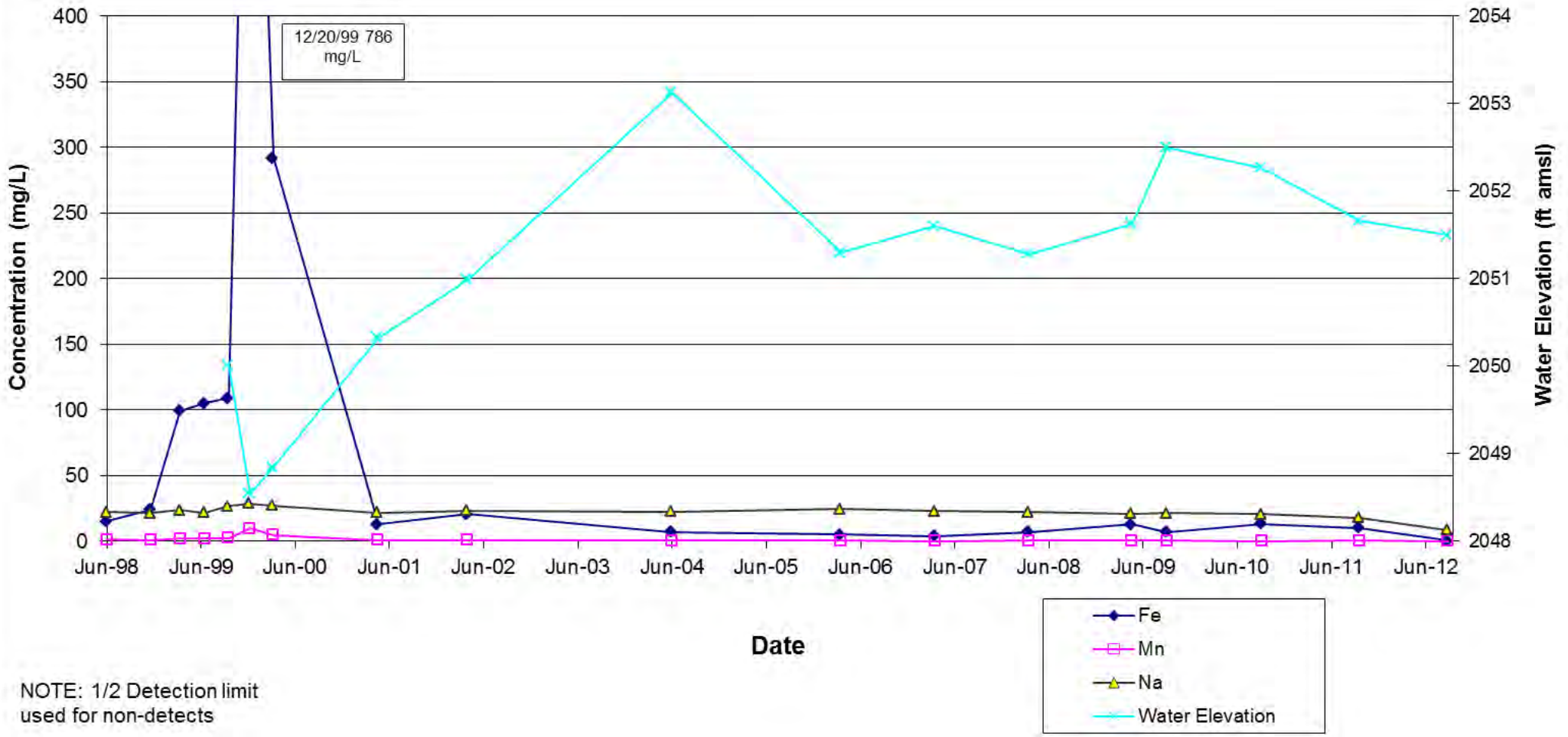
MW-17S VOCs



NOTES:

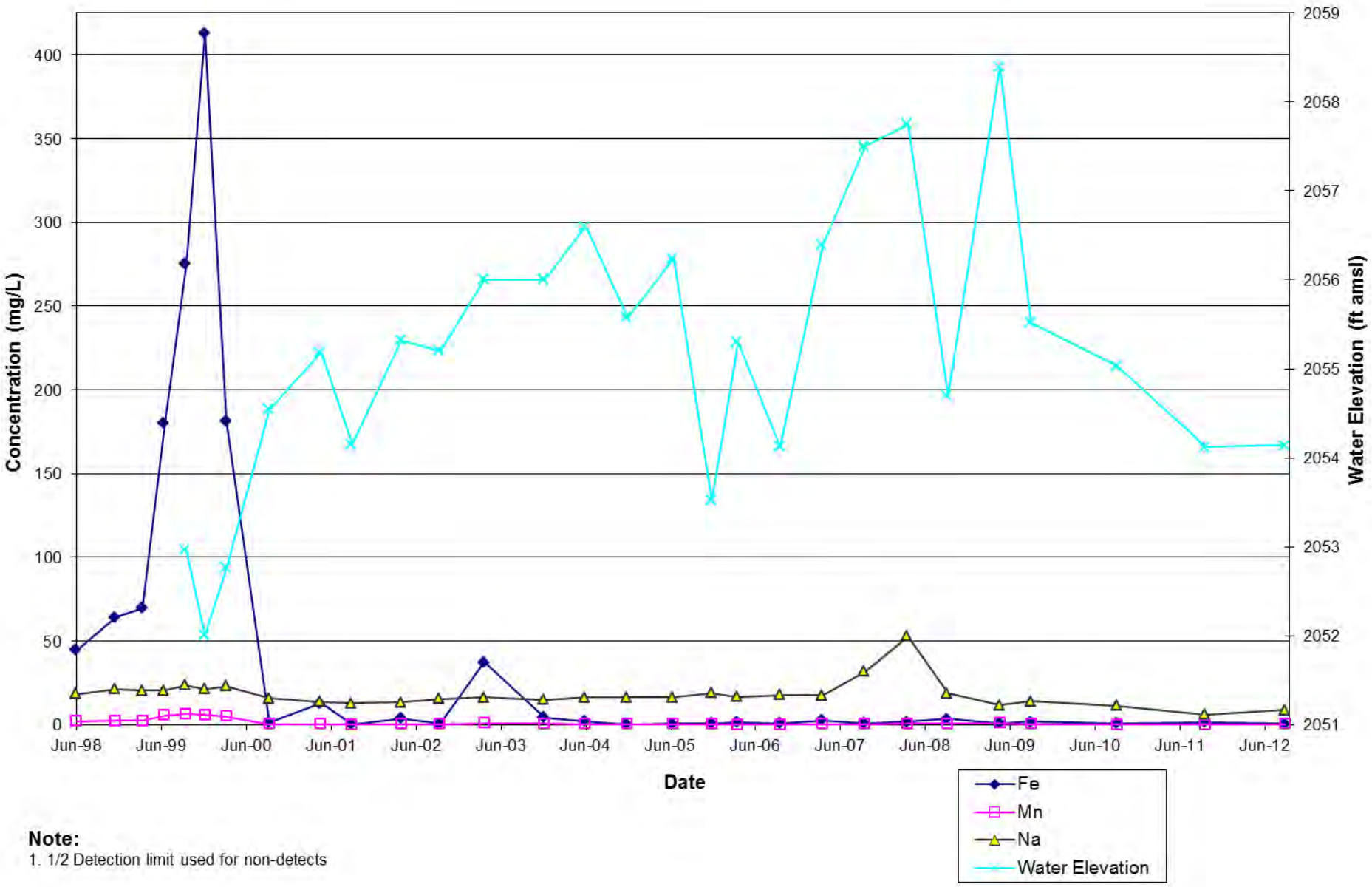
1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE and Vinyl choride results are either non-detect and/or estimated values.
4. Results for cDCE on 9/29/1999 and 3/25/2008 are non-detect.

MW-18D Metals



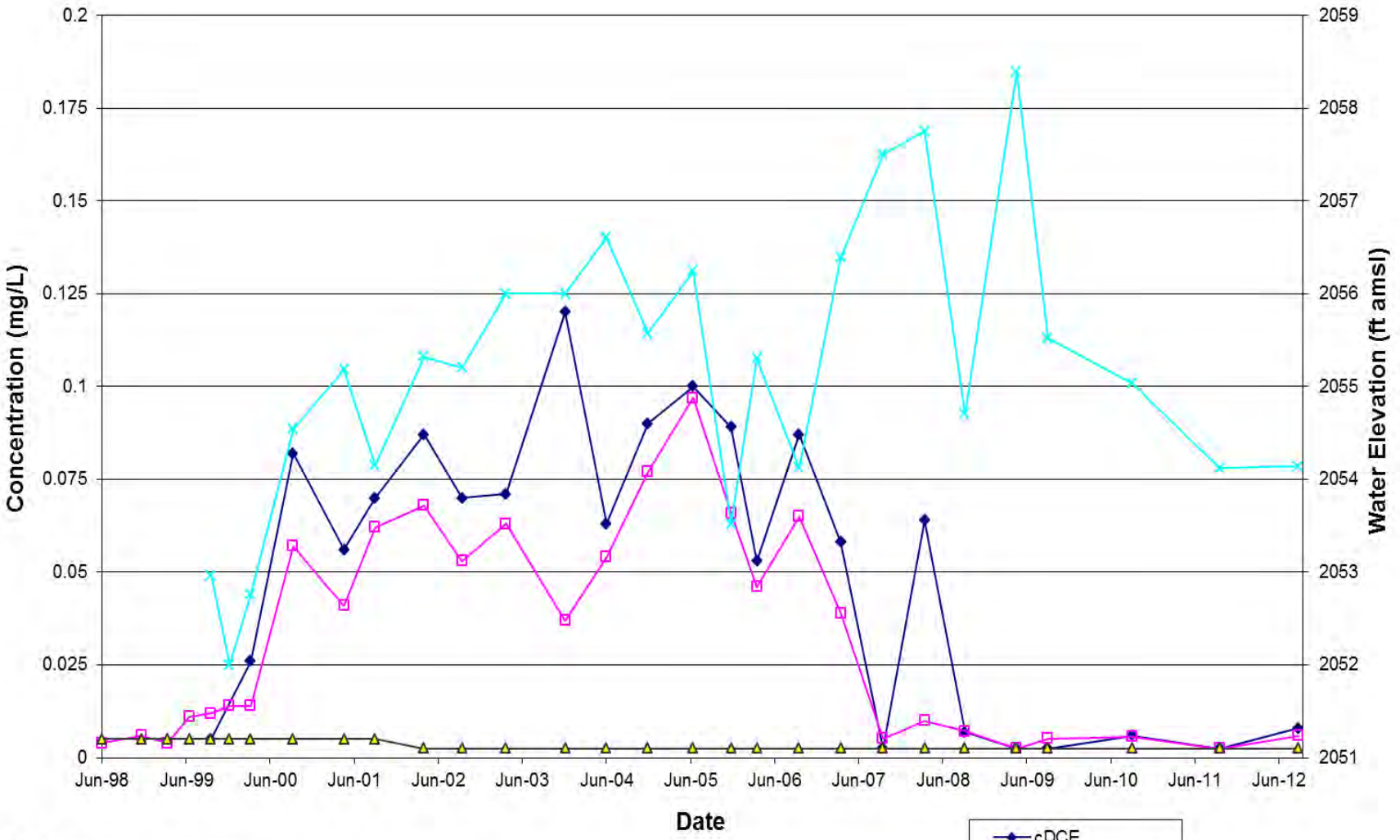
NOTE: 1/2 Detection limit used for non-detects

MW-18S Metals



Note:
1. 1/2 Detection limit used for non-detects

MW-18S VOCs



Notes:

1. 1/2 Detection limit used for non-detects.
2. Refer to Table B-1 (following graphs) for analytical results used in graphs.
3. TCE results on 6/15/1998, 12/1/1998 and 3/26/1999 are estimated values.
4. Vinyl chloride results are non-detect; cDCE is non-detect on 9/29/1999, 9/25/2007 and 4/28/2009.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/9/1998	6/15/1998	6/17/1998	12/1/1998	12/2/1998	3/23/1999	3/24/1999	3/25/1999	3/26/1999	6/23/1999	6/24/1999
CW-3A	Iron				15.8							
CW-3A	Manganese				0.306							
CW-3A	Sodium				55.6							
CW-3A	cis-1,2-Dichloroethene											
CW-3A	Trichloroethene			0.081	0.046				0.025			0.019
CW-3A	Vinyl chloride			0.01 U	0.01 U				0.01 U			0.01 U
CW-3B	Iron			0 U	0 U				0.0857 B			3.8
CW-3B	Manganese			0.0396	0 U				0.0054 B			0.0262
CW-3B	Sodium			19.9	21				22.1			18.9
CW-3B	cis-1,2-Dichloroethene											
CW-3B	Trichloroethene			0.028	0.038				0.027			0.034
CW-3B	Vinyl chloride			0.022	0.02				0.01 U			0.01
CW-4A	Iron		54.8		9.08				69.4			5.76
CW-4A	Manganese		3.82		2.11				2.56			1.7
CW-4A	Sodium		21.4		21				20.8			20
CW-4A	cis-1,2-Dichloroethene											
CW-4A	Trichloroethene		0.001 J		0.01 U				0.002 J			0.002 J
CW-4A	Vinyl chloride		0.006 J		0.003 J				0.005 J			0.005 J
MW-3D	Iron	0.558						2.46			39.5	
MW-3D	Manganese	0.0117						0.0592			0.622	
MW-3D	Sodium	14						13			14.3	
MW-3D	cis-1,2-Dichloroethene											
MW-3D	Trichloroethene	0.002 J						0.012			0.01	
MW-3D	Vinyl chloride	0.01 U						0.01 U			0.008 J	
MW-3S	Iron							128			306	
MW-3S	Manganese							2.75			19.9	
MW-3S	Sodium							27.8			25.2	
MW-3S	cis-1,2-Dichloroethene											
MW-3S	Trichloroethene							0.01 U			0.01 U	
MW-3S	Vinyl chloride							0.01 U			0.01 U	
MW-4D	Iron	3.59			3.02			7.36			1.99	
MW-4D	Manganese	0.426			0.985			1.1			0.978	
MW-4D	Sodium	11.9			7.9			11.1			9.42	
MW-4D	cis-1,2-Dichloroethene											
MW-4D	Trichloroethene	0.19			1.3			0.17			0.24	
MW-4D	Vinyl chloride	0.78			2			0.41 E			1.5	
MW-5D	Iron	1.44			0.408		1.15				0.746	
MW-5D	Manganese	1.24			1.3		1.18				1.2	
MW-5D	Sodium	6.6			6.14		6.75				5.43	
MW-5D	cis-1,2-Dichloroethene											
MW-5D	Trichloroethene	0.083 J			0.13		0.09 J				0.04 J	
MW-5D	Vinyl chloride	0.59			0.75		0.45				0.2	
MW-5S	Iron	12			4.08			10.5			3.83	
MW-5S	Manganese	0.25			0.266			0.195			0.22	
MW-5S	Sodium	7.4			7.08			2.44 B			7.74	
MW-5S	cis-1,2-Dichloroethene											
MW-5S	Trichloroethene	0.16			0.29 E			0.026			0.16	
MW-5S	Vinyl chloride	1 E			1 E			0.09			0.64 E	
MW-11S	Iron			23.3								
MW-11S	Manganese			1.38								
MW-11S	Sodium			15.2								
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene			2 E								
MW-11S	Vinyl chloride			0.084								

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/9/1998	6/15/1998	6/17/1998	12/1/1998	12/2/1998	3/23/1999	3/24/1999	3/25/1999	3/26/1999	6/23/1999	6/24/1999
MW-16S	Iron			9.99								
MW-16S	Manganese			0.198								
MW-16S	Sodium			5.75								
MW-16S	cis-1,2-Dichloroethene											
MW-16S	Trichloroethene			0 U								
MW-16S	Vinyl chloride			0 U								
MW-17D	Iron		42.1			25.5				18.1		
MW-17D	Manganese		0.857			1.5				1.52		
MW-17D	Sodium		32.3			31.2				31.1		
MW-17D	cis-1,2-Dichloroethene											
MW-17D	Trichloroethene		0.01 U			0.01 U				0.01 U		
MW-17D	Vinyl chloride		0.01 U			0.01 U				0.01 U		
MW-17S	Iron		3.34		2.61					3.37		
MW-17S	Manganese		1.54		1.56					1.47		
MW-17S	Sodium		46.4		47.8					48.6		
MW-17S	cis-1,2-Dichloroethene											
MW-17S	Trichloroethene		0.007		0.01 U					0.002 J		
MW-17S	Vinyl chloride		0.002 J		0.01 U					0.01 U		
MW-18D	Iron		15.2			24.3				99.5		
MW-18D	Manganese		1.53			1.03				2.08		
MW-18D	Sodium		22.1			21.5				23.8		
MW-18D	cis-1,2-Dichloroethene											
MW-18D	Trichloroethene		0.01 U			0.01 U				0.01 U		
MW-18D	Vinyl chloride		0.01 U			0.01 U				0.01 U		
MW-18S	Iron		44.6		64					69.6		
MW-18S	Manganese		2.02		2.26					2.32		
MW-18S	Sodium		18.4		21.1					20.2		
MW-18S	cis-1,2-Dichloroethene											
MW-18S	Trichloroethene		0.004 J		0.006 J					0.004 J		
MW-18S	Vinyl chloride		0.01 U		0.01 U					0.01 U		

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/28/1999	9/28/1999	9/29/1999	12/13/1999	12/14/1999	12/15/1999	12/16/1999	12/20/1999	3/13/2000	3/14/2000	3/15/2000
CW-3A	Iron		18.5					7.29				
CW-3A	Manganese		0.371					0.136				
CW-3A	Sodium		70					71				
CW-3A	cis-1,2-Dichloroethene		0.01 U							0.01 U		
CW-3A	Trichloroethene		0.021					0.026		0.017		
CW-3A	Vinyl chloride		0.01 U					0.01 U		0.01 U		
CW-3B	Iron		0.149		0.568					0.196		
CW-3B	Manganese		0.01 U		0.01 U					0.01 U		
CW-3B	Sodium		22.5		22.8					19.7		
CW-3B	cis-1,2-Dichloroethene		0.01 U							0.033		
CW-3B	Trichloroethene		0.035		0.05					0.048		
CW-3B	Vinyl chloride		0.01		0.012					0.008 J		
CW-4A	Iron		1.84		0.258					1.32		
CW-4A	Manganese		2.02		1.63					1.97		
CW-4A	Sodium		23.2		21.3					20.8		
CW-4A	cis-1,2-Dichloroethene		0.01 U							0.018		
CW-4A	Trichloroethene		0.002 J		0.002 J					0.002 J		
CW-4A	Vinyl chloride		0.004 J		0.006 J					0.004 J		
MW-3D	Iron		6.34				28.1					2.25
MW-3D	Manganese		0.125				0.371					0.0393
MW-3D	Sodium		14.6				20.3					14.3
MW-3D	cis-1,2-Dichloroethene		0.01 U									0.57
MW-3D	Trichloroethene		0.017				0.018					0.028
MW-3D	Vinyl chloride		0.01				0.008 J					0.034
MW-3S	Iron		86.1				114					49.1
MW-3S	Manganese		3.46				3.24					1.31
MW-3S	Sodium		28.8				28.7					32.5
MW-3S	cis-1,2-Dichloroethene		0.01 U									0.002 J
MW-3S	Trichloroethene		0.01 U				0.01 U					0.01 U
MW-3S	Vinyl chloride		0.01 U				0.01 U					0.01 U
MW-4D	Iron		0.722		0.686						1.21	
MW-4D	Manganese		1.47		0.743						1.55	
MW-4D	Sodium		10.9		17.4						10	
MW-4D	cis-1,2-Dichloroethene		0.01 U								1.7	
MW-4D	Trichloroethene		0.27 J		0.21 J						0.14	
MW-4D	Vinyl chloride		1.8		1						0.51	
MW-5D	Iron		0.315			0.357					0.983	
MW-5D	Manganese		1.03			1.2					1.15	
MW-5D	Sodium		6.65			7.43					6.22	
MW-5D	cis-1,2-Dichloroethene		0.01 U								1.1	
MW-5D	Trichloroethene		0.053 J			0.14					0.089 J	
MW-5D	Vinyl chloride		0.35			0.72					0.38	
MW-5S	Iron							5.82			1.76	
MW-5S	Manganese							0.274			0.258	
MW-5S	Sodium							7.84			7.7	
MW-5S	cis-1,2-Dichloroethene										1.4	
MW-5S	Trichloroethene							0.14			0.14	
MW-5S	Vinyl chloride							0.63			0.49	
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene											
MW-11S	Vinyl chloride											

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	6/28/1999	9/28/1999	9/29/1999	12/13/1999	12/14/1999	12/15/1999	12/16/1999	12/20/1999	3/13/2000	3/14/2000	3/15/2000
MW-16S	Iron											
MW-16S	Manganese											
MW-16S	Sodium											
MW-16S	cis-1,2-Dichloroethene											
MW-16S	Trichloroethene											
MW-16S	Vinyl chloride											
MW-17D	Iron	17.5		12.3					12.1			
MW-17D	Manganese	0.982		1.21					1.2			
MW-17D	Sodium	28.8		29.8					28.7			
MW-17D	cis-1,2-Dichloroethene			0.01 U								
MW-17D	Trichloroethene	0.01 U		0.01 U					0.01 U			
MW-17D	Vinyl chloride	0.01 U		0.01 U					0.01 U			
MW-17S	Iron	4.47		48.2					43.7			
MW-17S	Manganese	0.633		3.82					2.46			
MW-17S	Sodium	46.5		48.7					44.7			
MW-17S	cis-1,2-Dichloroethene			0.01 U								
MW-17S	Trichloroethene	0.002 J		0.001 J					0.002 J			
MW-17S	Vinyl chloride	0.01 U		0.01 U					0.01 U			
MW-18D	Iron	105		109					786			
MW-18D	Manganese	1.94		2.64					9.77			
MW-18D	Sodium	21.9		27					28.9			
MW-18D	cis-1,2-Dichloroethene			0.01 U								
MW-18D	Trichloroethene	0.01 U		0.01 U					0.01 U			
MW-18D	Vinyl chloride	0.01 U		0.01 U					0.01 U			
MW-18S	Iron	180		275					413			
MW-18S	Manganese	5.3		6.29					5.83			
MW-18S	Sodium	20.3		23.4					21.1			
MW-18S	cis-1,2-Dichloroethene			0.01 U								
MW-18S	Trichloroethene	0.011		0.012					0.014			
MW-18S	Vinyl chloride	0.01 U		0.01 U					0.01 U			

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/16/2000	3/21/2000	9/19/2000	9/20/2000	9/21/2000	4/23/2001	4/24/2001	4/25/2001	4/26/2001	4/30/2001	9/10/2001
CW-3A	Iron			3.07						0.172		
CW-3A	Manganese			0.101						0.01 U		
CW-3A	Sodium			71.7						32.2		
CW-3A	cis-1,2-Dichloroethene			0.01 U						0.0081 J		
CW-3A	Trichloroethene			0.016						0.11		
CW-3A	Vinyl chloride			0.01 U						0.01 U		
CW-3B	Iron			18					0.1 U			
CW-3B	Manganese			0.137					0.0122			
CW-3B	Sodium			24.3					21			
CW-3B	cis-1,2-Dichloroethene			0.03					0.029			
CW-3B	Trichloroethene			0.055					0.056			
CW-3B	Vinyl chloride			0.008 J					0.007 J			
CW-4A	Iron			0.164					0.821			0.142
CW-4A	Manganese			1.7					1.97			1.75
CW-4A	Sodium			20.6					21.1			18.7
CW-4A	cis-1,2-Dichloroethene			0.016					0.016			0.014
CW-4A	Trichloroethene			0.01 U					0.0022 J			0.0018 J
CW-4A	Vinyl chloride			0.004 J					0.0047 J			0.0044 J
MW-3D	Iron								0.23			
MW-3D	Manganese								0.05			
MW-3D	Sodium								12.5			
MW-3D	cis-1,2-Dichloroethene								0.85			
MW-3D	Trichloroethene								0.064			
MW-3D	Vinyl chloride								0.1			
MW-3S	Iron							3.06				
MW-3S	Manganese							0.0876				
MW-3S	Sodium							26.8				
MW-3S	cis-1,2-Dichloroethene							0.0061 J				
MW-3S	Trichloroethene							0.0019 J				
MW-3S	Vinyl chloride							0.01 U				
MW-4D	Iron					0.657		0.489				
MW-4D	Manganese					1.68		1.1				
MW-4D	Sodium					9.89		9.8				
MW-4D	cis-1,2-Dichloroethene					2.1		1.4				
MW-4D	Trichloroethene					0.13		0.08				
MW-4D	Vinyl chloride					0.84		0.55				
MW-5D	Iron				0.418			0.365				
MW-5D	Manganese				1.17			1.28				
MW-5D	Sodium				7			6.5				
MW-5D	cis-1,2-Dichloroethene				2			1.2				
MW-5D	Trichloroethene				0.13			0.11				
MW-5D	Vinyl chloride				0.65			0.36				
MW-5S	Iron				0.206		0.212					
MW-5S	Manganese				0.229		0.227					
MW-5S	Sodium				8.83		7.88					
MW-5S	cis-1,2-Dichloroethene				1.6		1.1					
MW-5S	Trichloroethene				0.18		0.14					
MW-5S	Vinyl chloride				0.63		0.4					
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene											
MW-11S	Vinyl chloride											

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/16/2000	3/21/2000	9/19/2000	9/20/2000	9/21/2000	4/23/2001	4/24/2001	4/25/2001	4/26/2001	4/30/2001	9/10/2001
MW-16S	Iron											
MW-16S	Manganese											
MW-16S	Sodium											
MW-16S	cis-1,2-Dichloroethene											
MW-16S	Trichloroethene											
MW-16S	Vinyl chloride											
MW-17D	Iron	18.3								3.7		
MW-17D	Manganese	1.27								0.0466		
MW-17D	Sodium	28.4								32.2		
MW-17D	cis-1,2-Dichloroethene	0.01 U								0.01 U		
MW-17D	Trichloroethene	0.01 U								0.01 U		
MW-17D	Vinyl chloride	0.01 U								0.01 U		
MW-17S	Iron	4.29								0.11		
MW-17S	Manganese	1.01								0.642		
MW-17S	Sodium	43.4								44.8		
MW-17S	cis-1,2-Dichloroethene	0.011								0.019		
MW-17S	Trichloroethene	0.002 J								0.004 J		
MW-17S	Vinyl chloride	0.01 U								0.01 U		
MW-18D	Iron		292								12.8	
MW-18D	Manganese		4.8								0.952	
MW-18D	Sodium		27.5								22	
MW-18D	cis-1,2-Dichloroethene		0.01 U								0.01 U	
MW-18D	Trichloroethene		0.01 U								0.01 U	
MW-18D	Vinyl chloride		0.01 U								0.01 U	
MW-18S	Iron		181			1.29					12.7	
MW-18S	Manganese		4.78			0.301					0.32	
MW-18S	Sodium		22.9			15.6					13.6	
MW-18S	cis-1,2-Dichloroethene		0.026			0.082					0.056	
MW-18S	Trichloroethene		0.014			0.057					0.041	
MW-18S	Vinyl chloride		0.01 U			0.01 U					0.01 U	

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/11/2001	9/12/2001	4/9/2002	4/10/2002	4/11/2002	4/12/2002	9/24/2002	9/25/2002	9/26/2002	3/28/2003	3/31/2003
CW-3A	Iron	0.1 U			0.1 U				0.445			
CW-3A	Manganese	0.01 U			0.01 U				0.114			
CW-3A	Sodium	51.1			29.1				44.1			
CW-3A	cis-1,2-Dichloroethene	0.0096 J			0.017				0.018			
CW-3A	Trichloroethene	0.095			0.19				0.16			
CW-3A	Vinyl chloride	0.01 U			0.005 U				0.005 U			
CW-3B	Iron	0.357		0.869				1.02				0.447
CW-3B	Manganese	0.01 U		0.0102				0.0176				0.015
CW-3B	Sodium	20		20.9				23.8				23.5
CW-3B	cis-1,2-Dichloroethene	0.028		0.041				0.031				0.035
CW-3B	Trichloroethene	0.058		0.077				0.068				0.085
CW-3B	Vinyl chloride	0.0068 J		0.0071				0.005 U				0.0051
CW-4A	Iron			0.122				15.3				
CW-4A	Manganese			0.735				9.92				
CW-4A	Sodium			20.2				25.4				
CW-4A	cis-1,2-Dichloroethene			0.011				0.015				
CW-4A	Trichloroethene			0.005 U				0.005 U				
CW-4A	Vinyl chloride			0.005 U				0.005 U				
MW-3D	Iron					0.178						
MW-3D	Manganese					0.0486						
MW-3D	Sodium					14.2						
MW-3D	cis-1,2-Dichloroethene					0.12						
MW-3D	Trichloroethene					0.014						
MW-3D	Vinyl chloride					0.017						
MW-3S	Iron				0.487							
MW-3S	Manganese				0.0159							
MW-3S	Sodium				28.1							
MW-3S	cis-1,2-Dichloroethene				0.005 U							
MW-3S	Trichloroethene				0.0071							
MW-3S	Vinyl chloride				0.005 U							
MW-4D	Iron		0.33			0.558				0.169	0.314	
MW-4D	Manganese		1.52			1.15				1.11	0.934	
MW-4D	Sodium		9.83			9.76				10.2	10.5	
MW-4D	cis-1,2-Dichloroethene		2.3			1.5				0.85	1.1	
MW-4D	Trichloroethene		0.097 J			0.077				0.063	0.071	
MW-4D	Vinyl chloride		0.64			0.49				0.26	0.38	
MW-5D	Iron		0.411			0.631			0.478			
MW-5D	Manganese		1.23			1.28			0.726			
MW-5D	Sodium		5.56			6.29			6.6			
MW-5D	cis-1,2-Dichloroethene		1.5			1.8			0.99			
MW-5D	Trichloroethene		0.074 J			0.14			0.005 U			
MW-5D	Vinyl chloride		0.5			0.51			0.2			
MW-5S	Iron		0.136			0.351				0.606	3.02	
MW-5S	Manganese		0.22			0.203				0.114	0.213	
MW-5S	Sodium		7.73			7.84				16.6	9.63	
MW-5S	cis-1,2-Dichloroethene		1.1			1				0.48	0.76	
MW-5S	Trichloroethene		0.14			0.14				0.005 U	0.11	
MW-5S	Vinyl chloride		0.46			0.3				0.095	0.22	
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene											
MW-11S	Trichloroethene											
MW-11S	Vinyl chloride											

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/11/2001	9/12/2001	4/9/2002	4/10/2002	4/11/2002	4/12/2002	9/24/2002	9/25/2002	9/26/2002	3/28/2003	3/31/2003
MW-16S	Iron											
MW-16S	Manganese											
MW-16S	Sodium											
MW-16S	cis-1,2-Dichloroethene											
MW-16S	Trichloroethene											
MW-16S	Vinyl chloride											
MW-17D	Iron						16.4					
MW-17D	Manganese						0.166					
MW-17D	Sodium						33.6					
MW-17D	cis-1,2-Dichloroethene						0.005 U					
MW-17D	Trichloroethene						0.005 U					
MW-17D	Vinyl chloride						0.005 U					
MW-17S	Iron						0.313					
MW-17S	Manganese						0.292					
MW-17S	Sodium						47.1					
MW-17S	cis-1,2-Dichloroethene						0.083					
MW-17S	Trichloroethene						0.014					
MW-17S	Vinyl chloride						0.005 U					
MW-18D	Iron						20.9					
MW-18D	Manganese						0.967					
MW-18D	Sodium						23.4					
MW-18D	cis-1,2-Dichloroethene						0.005 U					
MW-18D	Trichloroethene						0.005 U					
MW-18D	Vinyl chloride						0.005 U					
MW-18S	Iron	0.264					3.62		0.394			
MW-18S	Manganese	0.0218					0.0434		0.058			
MW-18S	Sodium	12.6					13.4		15.3			
MW-18S	cis-1,2-Dichloroethene	0.07					0.087		0.07			
MW-18S	Trichloroethene	0.062					0.068		0.053			
MW-18S	Vinyl chloride	0.01 U					0.005 U		0.005 U			

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	4/1/2003	4/2/2003	4/3/2003	12/16/2003	12/17/2003	12/18/2003	6/8/2004	6/9/2004	6/11/2004	12/7/2004	12/8/2004
CW-3A	Iron	1.06			0.1 U			0.1 U			0.1 U	
CW-3A	Manganese	0.0392			0.0124			0.0102			0.0649	
CW-3A	Sodium	45.6			50.1			44.1			56	
CW-3A	cis-1,2-Dichloroethene	0.016			0.058			0.061			0.038	
CW-3A	Trichloroethene	0.14			0.38			0.39			0.36	
CW-3A	Vinyl chloride	0.005 U			0.005 U			0.005 U			0.005 U	
CW-3B	Iron				0.1 U			0.1 U			0.132	
CW-3B	Manganese				0.0192			0.0275			0.0399	
CW-3B	Sodium				21			22.4			20.8	
CW-3B	cis-1,2-Dichloroethene				0.052			0.051			0.049	
CW-3B	Trichloroethene				0.11			0.12			0.14	
CW-3B	Vinyl chloride				0.006			0.0055			0.005 U	
CW-4A	Iron	2.37			0.1 U			0.322			0.1 U	
CW-4A	Manganese	2.41			1.03			1			0.914	
CW-4A	Sodium	21.9			19.6			20.9			18.6	
CW-4A	cis-1,2-Dichloroethene	0.012			0.012			0.013			0.0079	
CW-4A	Trichloroethene	0.005 U			0.005 U			0.005 U			0.005 U	
CW-4A	Vinyl chloride	0.005 U			0.005 U			0.005 U			0.005 U	
MW-3D	Iron		0.1 U						0.1 U			
MW-3D	Manganese		0.0244						0.014			
MW-3D	Sodium		14.9						17.9			
MW-3D	cis-1,2-Dichloroethene		0.22						0.033			
MW-3D	Trichloroethene		0.038						0.0057			
MW-3D	Vinyl chloride		0.017						0.005 U			
MW-3S	Iron		125						1.07			
MW-3S	Manganese		3.26						0.0333			
MW-3S	Sodium		29.4						31.3			
MW-3S	cis-1,2-Dichloroethene		0.005 U						0.005 U			
MW-3S	Trichloroethene		0.005 U						0.005 U			
MW-3S	Vinyl chloride		0.005 U						0.005 U			
MW-4D	Iron						0.36		0.543			
MW-4D	Manganese						0.946		0.734			
MW-4D	Sodium						10.8		9.1			
MW-4D	cis-1,2-Dichloroethene						0.73		0.62			
MW-4D	Trichloroethene						0.051		0.05			
MW-4D	Vinyl chloride						0.23		0.21			
MW-5D	Iron		0.391				0.391		0.471			
MW-5D	Manganese		1.16				1.39		1.44			
MW-5D	Sodium		6.56				7.52		6.49			
MW-5D	cis-1,2-Dichloroethene		1.2				1.6		2			
MW-5D	Trichloroethene		0.1				0.11		0.13			
MW-5D	Vinyl chloride		0.36				0.39		0.41			
MW-5S	Iron						5.87		2.03			
MW-5S	Manganese						0.864		0.506			
MW-5S	Sodium						9.44		7.75			
MW-5S	cis-1,2-Dichloroethene						0.54		0.61			
MW-5S	Trichloroethene						0.073		0.072			
MW-5S	Vinyl chloride						0.14		0.19			
MW-11S	Iron											0.1 U
MW-11S	Manganese											1.52
MW-11S	Sodium											18.6
MW-11S	cis-1,2-Dichloroethene											0.52
MW-11S	Trichloroethene											2.9
MW-11S	Vinyl chloride											0.005 U

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	4/1/2003	4/2/2003	4/3/2003	12/16/2003	12/17/2003	12/18/2003	6/8/2004	6/9/2004	6/11/2004	12/7/2004	12/8/2004
MW-16S	Iron											0.1 U
MW-16S	Manganese											0.01 U
MW-16S	Sodium											6.85
MW-16S	cis-1,2-Dichloroethene											0.005 U
MW-16S	Trichloroethene											0.005 U
MW-16S	Vinyl chloride											0.005 U
MW-17D	Iron			13						9.01		
MW-17D	Manganese			1.17						1.23		
MW-17D	Sodium			28.9						29.5		
MW-17D	cis-1,2-Dichloroethene			0.005 U						0.005 U		
MW-17D	Trichloroethene			0.005 U						0.005 U		
MW-17D	Vinyl chloride			0.005 U						0.005 U		
MW-17S	Iron			0.284						0.229		
MW-17S	Manganese			0.464						0.459		
MW-17S	Sodium			49.5						58.9		
MW-17S	cis-1,2-Dichloroethene			0.036						0.13		
MW-17S	Trichloroethene			0.0064						0.02		
MW-17S	Vinyl chloride			0.005 U						0.0086		
MW-18D	Iron									7.12		
MW-18D	Manganese									0.628		
MW-18D	Sodium									22.6		
MW-18D	cis-1,2-Dichloroethene									0.005 U		
MW-18D	Trichloroethene									0.005 U		
MW-18D	Vinyl chloride									0.005 U		
MW-18S	Iron			37.3		4.18				1.87		
MW-18S	Manganese			0.888		0.536				0.0704		
MW-18S	Sodium			16.1		14.9				16.1		
MW-18S	cis-1,2-Dichloroethene			0.071		0.12				0.063		
MW-18S	Trichloroethene			0.063		0.037				0.054		
MW-18S	Vinyl chloride			0.005 U		0.005 U				0.005 U		

Please see page 20 for notes.

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Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	12/9/2004	6/20/2005	6/21/2005	6/22/2005	6/23/2005	12/6/2005	12/7/2005	12/8/2005	3/27/2006	3/28/2006	3/29/2006
CW-3A	Iron		0.117				0.1 U					
CW-3A	Manganese		0.0174				0.0313					
CW-3A	Sodium		54.3				63.6					
CW-3A	cis-1,2-Dichloroethene		0.13				0.041					
CW-3A	Trichloroethene		1				0.25 D					
CW-3A	Vinyl chloride		0.013				0.005 U					
CW-3B	Iron		1.62				0.1 U					
CW-3B	Manganese		0.0513				0.0473					
CW-3B	Sodium		22.8				23.6					
CW-3B	cis-1,2-Dichloroethene		0.074				0.081					
CW-3B	Trichloroethene		0.2				0.18 D					
CW-3B	Vinyl chloride		0.01 U				0.005 U					
CW-4A	Iron		0.188								0.936	
CW-4A	Manganese		1.04								0.495	
CW-4A	Sodium		19.6								17.1	
CW-4A	cis-1,2-Dichloroethene		0.0086								0.0069	
CW-4A	Trichloroethene		0.005 U								0.005 U	
CW-4A	Vinyl chloride		0.005 U								0.005 U	
MW-3D	Iron			0.236								
MW-3D	Manganese			0.0217								
MW-3D	Sodium			15.6								
MW-3D	cis-1,2-Dichloroethene			0.037								
MW-3D	Trichloroethene			0.0076								
MW-3D	Vinyl chloride			0.005								
MW-3S	Iron			0.621								
MW-3S	Manganese			0.0189								
MW-3S	Sodium			30.1								
MW-3S	cis-1,2-Dichloroethene			0.005 U								
MW-3S	Trichloroethene			0.005 U								
MW-3S	Vinyl chloride			0.005 U								
MW-4D	Iron	0.482		0.382				0.733				0.657
MW-4D	Manganese	0.632		0.604				0.909				0.583
MW-4D	Sodium	8.52		9.01				8.18				7.12
MW-4D	cis-1,2-Dichloroethene	0.39		0.44				0.74 D				0.3
MW-4D	Trichloroethene	0.039		0.032				0.032				0.02
MW-4D	Vinyl chloride	0.23		0.16				0.54 D				0.17
MW-5D	Iron	0.443			0.527			0.482				0.545
MW-5D	Manganese	1.43			1.5			1.38				1.41
MW-5D	Sodium	6.66			7.24			7.23				6.9
MW-5D	cis-1,2-Dichloroethene	1.3			1.6			1.2				1.5
MW-5D	Trichloroethene	0.096			0.081			0.078				0.087
MW-5D	Vinyl chloride	0.29			0.31			0.34				0.31
MW-5S	Iron	1.65			0.866			2.52				3.67
MW-5S	Manganese	0.489			0.156			0.446				1.1
MW-5S	Sodium	4.14			8.04			7.8				5.13
MW-5S	cis-1,2-Dichloroethene	0.17			0.6			0.51 D				0.29
MW-5S	Trichloroethene	0.025			0.1			0.08				0.042
MW-5S	Vinyl chloride	0.038			0.16			0.15				0.059
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene					0.53			0.63			
MW-11S	Trichloroethene					3.2			3.1			
MW-11S	Vinyl chloride					0.05 U			0.1 U			

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	12/9/2004	6/20/2005	6/21/2005	6/22/2005	6/23/2005	12/6/2005	12/7/2005	12/8/2005	3/27/2006	3/28/2006	3/29/2006
MW-16S	Iron											
MW-16S	Manganese											
MW-16S	Sodium											
MW-16S	cis-1,2-Dichloroethene					0.005 U						
MW-16S	Trichloroethene					0.005 U						
MW-16S	Vinyl chloride					0.005 U						
MW-17D	Iron				11.9					5.08		
MW-17D	Manganese				1.12					0.313		
MW-17D	Sodium				30.2					32.4		
MW-17D	cis-1,2-Dichloroethene				0.005 U					0.005 U		
MW-17D	Trichloroethene				0.005 U					0.005 U		
MW-17D	Vinyl chloride				0.005 U					0.005 U		
MW-17S	Iron				0.24					0.151		
MW-17S	Manganese				1.3					0.146		
MW-17S	Sodium				52.7					51.8		
MW-17S	cis-1,2-Dichloroethene				0.06					0.086		
MW-17S	Trichloroethene				0.011					0.014		
MW-17S	Vinyl chloride				0.005 U					0.005 U		
MW-18D	Iron										5.08	
MW-18D	Manganese										0.583	
MW-18D	Sodium										24.6	
MW-18D	cis-1,2-Dichloroethene										0.005 U	
MW-18D	Trichloroethene										0.005 U	
MW-18D	Vinyl chloride										0.005 U	
MW-18S	Iron	0.254				0.419	0.634				1.35	
MW-18S	Manganese	0.043				0.0453	0.0596				0.0359	
MW-18S	Sodium	16.1				16.2	19				16.6	
MW-18S	cis-1,2-Dichloroethene	0.09				0.1	0.089				0.053	
MW-18S	Trichloroethene	0.077				0.097	0.066				0.046	
MW-18S	Vinyl chloride	0.005 U				0.005 U	0.005 U				0.005 U	

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/30/2006	3/31/2006	9/27/2006	9/28/2006	3/27/2007	3/28/2007	3/29/2007	3/30/2007	9/25/2007	9/26/2007	3/24/2008
CW-3A	Iron	0.1 U			0.168				0.1 U	0.661		
CW-3A	Manganese	0.01 U			0.0325				0.0505	1.38		
CW-3A	Sodium	47			58.4				50.2	47.2		
CW-3A	cis-1,2-Dichloroethene	0.024			0.059				0.04	0.058		
CW-3A	Trichloroethene	0.18			0.29 D				0.22 D	0.36		
CW-3A	Vinyl chloride	0.005 U			0.005 U				0.005 U	0.01 U		
CW-3B	Iron	0.1 U			0.516				4.71	0.156		
CW-3B	Manganese	0.0441			0.0446				0.0688	0.0438		
CW-3B	Sodium	21.6			22				22.4	20.9		
CW-3B	cis-1,2-Dichloroethene	0.072			0.072				0.086	0.087		
CW-3B	Trichloroethene	0.19			0.19				0.24	0.26		
CW-3B	Vinyl chloride	0.01 U			0.01 U				0.01 U	0.01 U		
CW-4A	Iron							2.76				
CW-4A	Manganese							0.478				
CW-4A	Sodium							17				
CW-4A	cis-1,2-Dichloroethene							0.0052				
CW-4A	Trichloroethene							0.005 U				
CW-4A	Vinyl chloride							0.005 U				
MW-3D	Iron	0.1 U						0.1 U				
MW-3D	Manganese	0.01 U						0.0131				
MW-3D	Sodium	16.9						15.8				
MW-3D	cis-1,2-Dichloroethene	0.024						0.027				
MW-3D	Trichloroethene	0.005 U						0.0054				
MW-3D	Vinyl chloride	0.005 U						0.005 U				
MW-3S	Iron	0.585						0.177				
MW-3S	Manganese	0.0106						0.01 U				
MW-3S	Sodium	26.9						27.4				
MW-3S	cis-1,2-Dichloroethene	0.005 U						0.005 U				
MW-3S	Trichloroethene	0.005 U						0.005 U				
MW-3S	Vinyl chloride	0.005 U						0.005 U				
MW-4D	Iron			0.686		1.2				0.806		1.98
MW-4D	Manganese			0.799		0.406				0.859		0.614
MW-4D	Sodium			8.24		8.28				7.98		8.48
MW-4D	cis-1,2-Dichloroethene			0.73 D		0.42 D				3 E		0.75
MW-4D	Trichloroethene			0.03		0.02				0.05 U		0.025 U
MW-4D	Vinyl chloride			0.41 D		0.2				0.68		0.31
MW-5D	Iron				0.595	0.71				0.531		
MW-5D	Manganese				1.37	1.51				1.41		
MW-5D	Sodium				6.97	7.03				7.68		
MW-5D	cis-1,2-Dichloroethene				1.4	1.8				1.4		
MW-5D	Trichloroethene				0.075	0.081				0.066		
MW-5D	Vinyl chloride				0.19	0.28				0.24		
MW-5S	Iron				1.28	8.01				0.794		
MW-5S	Manganese				0.161	0.257				0.18		
MW-5S	Sodium				7.94	7.11				7.92		
MW-5S	cis-1,2-Dichloroethene				0.47 D	0.44				0.49		
MW-5S	Trichloroethene				0.075	0.064				0.071		
MW-5S	Vinyl chloride				0.089	0.08				0.09		
MW-11S	Iron											
MW-11S	Manganese											
MW-11S	Sodium											
MW-11S	cis-1,2-Dichloroethene		0.56	0.54					0.5		0.52	0.45
MW-11S	Trichloroethene		3.1	3					2.9		3.2	2.6
MW-11S	Vinyl chloride		0.1 U	0.1 U					0.1 U		0.13 U	0.1 U

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/30/2006	3/31/2006	9/27/2006	9/28/2006	3/27/2007	3/28/2007	3/29/2007	3/30/2007	9/25/2007	9/26/2007	3/24/2008
MW-16S	Iron											
MW-16S	Manganese											
MW-16S	Sodium											
MW-16S	cis-1,2-Dichloroethene		0.005 U	0.005 U					0.005 U		0.005 U	0.005 U
MW-16S	Trichloroethene		0.005 U	0.0066					0.005 U		0.005 U	0.005 U
MW-16S	Vinyl chloride		0.005 U	0.005 U					0.005 U		0.005 U	0.005 U
MW-17D	Iron						3.91					
MW-17D	Manganese						0.222					
MW-17D	Sodium						33.1					
MW-17D	cis-1,2-Dichloroethene						0.005 U					
MW-17D	Trichloroethene						0.005 U					
MW-17D	Vinyl chloride						0.005 U					
MW-17S	Iron						0.468					
MW-17S	Manganese						0.394					
MW-17S	Sodium						50.2					
MW-17S	cis-1,2-Dichloroethene						0.056					
MW-17S	Trichloroethene						0.0077					
MW-17S	Vinyl chloride						0.005 U					
MW-18D	Iron						4.15					
MW-18D	Manganese						0.349					
MW-18D	Sodium						23.1					
MW-18D	cis-1,2-Dichloroethene						0.005 U					
MW-18D	Trichloroethene						0.005 U					
MW-18D	Vinyl chloride						0.005 U					
MW-18S	Iron			0.622			2.51			0.753		
MW-18S	Manganese			0.0339			0.0621			0.0567		
MW-18S	Sodium			17.6			17.3			31.6		
MW-18S	cis-1,2-Dichloroethene			0.087			0.058			0.005 U		
MW-18S	Trichloroethene			0.065			0.039			0.0052		
MW-18S	Vinyl chloride			0.005 U			0.005 U			0.005 U		

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/25/2008	3/26/2008	9/16/2008	9/17/2008	12/11/2008	4/27/2009	4/28/2009	4/29/2009	4/30/2009	9/9/2009	9/10/2009
CW-3A	Iron	0.15			0.1 U				0.13			
CW-3A	Manganese	0.018			0.12				0.08			
CW-3A	Sodium	51.2			67.4				51.6			
CW-3A	cis-1,2-Dichloroethene	0.03			0.018				0.02			
CW-3A	Trichloroethene	0.16			0.1				0.13			
CW-3A	Vinyl chloride	0.005 U			0.005 U				0.005 U			
CW-3B	Iron	0.205			0.193				0.17			
CW-3B	Manganese	0.0356			0.0386				0.044			
CW-3B	Sodium	22.6			22				21.1			
CW-3B	cis-1,2-Dichloroethene	0.078			0.078				0.083			
CW-3B	Trichloroethene	0.22			0.27 D				0.18 D			
CW-3B	Vinyl chloride	0.01 U			0.005 U				0.005 U			
CW-4A	Iron	5.14							0.73			
CW-4A	Manganese	0.49							0.262			
CW-4A	Sodium	17.9							16.1			
CW-4A	cis-1,2-Dichloroethene	0.005							0.005 U			
CW-4A	Trichloroethene	0.005 U							0.005 U			
CW-4A	Vinyl chloride	0.005 U							0.005 U			
MW-3D	Iron	0.1 U					0.1 U				0.1 U	
MW-3D	Manganese	0.0183					0.011				0.017	
MW-3D	Sodium	15.1					16.7				14.8	
MW-3D	cis-1,2-Dichloroethene	0.027					0.018				0.019	
MW-3D	Trichloroethene	0.0085					0.0057				0.0051	
MW-3D	Vinyl chloride	0.005 U					0.005 U				0.005 U	
MW-3S	Iron	0.196					0.34				0.1 U	
MW-3S	Manganese	0.01 U					0.01				0.01 U	
MW-3S	Sodium	30.4					37.4				30.9	
MW-3S	cis-1,2-Dichloroethene	0.005 U					0.005 U				0.005 U	
MW-3S	Trichloroethene	0.005 U					0.005 U				0.005 U	
MW-3S	Vinyl chloride	0.005 U					0.005 U				0.005 U	
MW-4D	Iron			0.706				0.93			1.18	
MW-4D	Manganese			0.613				0.534			1.12	
MW-4D	Sodium			7.86				8.3			8.4	
MW-4D	cis-1,2-Dichloroethene			2.5 D		1.8		0.9 D			0.67	
MW-4D	Trichloroethene			0.025 U		0.05 U		0.025 U			0.025 U	
MW-4D	Vinyl chloride			0.83		0.5		0.35			0.26	
MW-5D	Iron		2.24		0.455			0.49			0.45	
MW-5D	Manganese		1.29		1.22			1.26			1.31	
MW-5D	Sodium		6.78		7.04			6.5			7.1	
MW-5D	cis-1,2-Dichloroethene		1.6 D		1.2			1.5			1.6	
MW-5D	Trichloroethene		0.091		0.069			0.099			0.11	
MW-5D	Vinyl chloride		0.24 D		0.2			0.18			0.18	
MW-5S	Iron		3.17		0.452		2.88					0.25
MW-5S	Manganese		0.3		0.144		0.307					0.127
MW-5S	Sodium		5.32		7.22		6.4					6.9
MW-5S	cis-1,2-Dichloroethene		0.29		0.39		0.29					0.35
MW-5S	Trichloroethene		0.045		0.041		0.042					0.058
MW-5S	Vinyl chloride		0.056		0.081		0.043					0.064
MW-11S	Iron											0.38
MW-11S	Manganese											1.44
MW-11S	Sodium											19.8
MW-11S	cis-1,2-Dichloroethene				0.41					0.31		0.018
MW-11S	Trichloroethene				2.8					2.3 D		0.12
MW-11S	Vinyl chloride				0.1 U					0.022		0.005 U

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/25/2008	3/26/2008	9/16/2008	9/17/2008	12/11/2008	4/27/2009	4/28/2009	4/29/2009	4/30/2009	9/9/2009	9/10/2009
MW-16S	Iron											0.2
MW-16S	Manganese											0.01 U
MW-16S	Sodium											7.7
MW-16S	cis-1,2-Dichloroethene				0.005 U					0.005 U		0.005 U
MW-16S	Trichloroethene				0.005 U					0.005 U		0.005 U
MW-16S	Vinyl chloride				0.005 U					0.005 U		0.005 U
MW-17D	Iron	13.4						6.21				8.33
MW-17D	Manganese	1.18						0.997				0.469
MW-17D	Sodium	29.6						29.4				31.5
MW-17D	cis-1,2-Dichloroethene	0.005 U						0.005 U				0.005 U
MW-17D	Trichloroethene	0.005 U						0.005 U				0.005 U
MW-17D	Vinyl chloride	0.005 U						0.005 U				0.005 U
MW-17S	Iron	2.85						0.64				0.23
MW-17S	Manganese	0.0716						0.342				0.134
MW-17S	Sodium	8.22						51.4				56.5
MW-17S	cis-1,2-Dichloroethene	0.005 U						0.022				0.065
MW-17S	Trichloroethene	0.005 U						0.005 U				0.014
MW-17S	Vinyl chloride	0.005 U						0.005 U				0.005 U
MW-18D	Iron		7.07					13				7.05
MW-18D	Manganese		0.454					0.574				0.565
MW-18D	Sodium		22.4					21.3				21.5
MW-18D	cis-1,2-Dichloroethene		0.005 U					0.005 U				0.005 U
MW-18D	Trichloroethene		0.005 U					0.005 U				0.005 U
MW-18D	Vinyl chloride		0.005 U					0.005 U				0.005 U
MW-18S	Iron		1.59	3.49				0.89				1.58
MW-18S	Manganese		0.393	0.341				0.634				0.073
MW-18S	Sodium		52.8	18.5				11.5				14
MW-18S	cis-1,2-Dichloroethene		0.064	0.0069				0.005 U				0.005 U
MW-18S	Trichloroethene		0.01	0.0072				0.005 U				0.0052
MW-18S	Vinyl chloride		0.005 U	0.005 U				0.005 U				0.005 U

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/14/2009	3/24/2010	3/25/2010	9/13/2010	9/14/2010	3/21/2011	3/22/2011	9/26/2011	9/27/2011	9/28/2011	9/29/2011
CW-3A	Iron	0.13				0.1 U				0.1 U		
CW-3A	Manganese	0.014				0.088				0.011		
CW-3A	Sodium	55.6				51.2				39.1		
CW-3A	cis-1,2-Dichloroethene	0.02				0.029				0.0089		
CW-3A	Trichloroethene	0.12				0.17				0.064		
CW-3A	Vinyl chloride	0.005 U				0.005 U				0.005 U		
CW-3B	Iron	0.15				0.1 U				1.16		
CW-3B	Manganese	0.034				0.035				0.037		
CW-3B	Sodium	20.9				20.2				20.4		
CW-3B	cis-1,2-Dichloroethene	0.071				0.09				0.082		
CW-3B	Trichloroethene	0.22				0.29 D				0.33		
CW-3B	Vinyl chloride	0.01 U				0.005 U				0.01 U		
CW-4A	Iron	0.32			0.53					0.24		
CW-4A	Manganese	0.735			0.731					0.465		
CW-4A	Sodium	16.9			16.3					16.1		
CW-4A	cis-1,2-Dichloroethene	0.0052			0.0051					0.005 U		
CW-4A	Trichloroethene	0.005 U			0.005 U					0.005 U		
CW-4A	Vinyl chloride	0.005 U			0.005 U					0.005 U		
MW-3D	Iron					0.1 U					0.1 U	
MW-3D	Manganese					0.016					0.01 U	
MW-3D	Sodium					13.8					15.3	
MW-3D	cis-1,2-Dichloroethene					0.017					0.011	
MW-3D	Trichloroethene					0.005 U					0.005 U	
MW-3D	Vinyl chloride					0.005 U					0.005 U	
MW-3S	Iron					0.12					0.1 U	
MW-3S	Manganese					0.01					0.01 U	
MW-3S	Sodium					31.5					30.4	
MW-3S	cis-1,2-Dichloroethene					0.005 U					0.005 U	
MW-3S	Trichloroethene					0.005 U					0.005 U	
MW-3S	Vinyl chloride					0.005 U					0.005 U	
MW-4D	Iron					0.84				0.6		
MW-4D	Manganese					0.54				0.729		
MW-4D	Sodium					8.2				7.9		
MW-4D	cis-1,2-Dichloroethene		0.56			0.61	0.59			0.66		
MW-4D	Trichloroethene		0.025 U			0.025 U	0.025 U			0.025 U		
MW-4D	Vinyl chloride		0.24			0.26	0.28			0.22		
MW-5D	Iron				0.39							1.07
MW-5D	Manganese				1.19							0.838
MW-5D	Sodium				7							6.2
MW-5D	cis-1,2-Dichloroethene		1.6		1.1		0.14					0.58
MW-5D	Trichloroethene		0.099		0.071		0.025					0.037
MW-5D	Vinyl chloride		0.18		0.13		0.025					0.068
MW-5S	Iron				0.55							2.53
MW-5S	Manganese				0.125							0.236
MW-5S	Sodium				6.6							3.4
MW-5S	cis-1,2-Dichloroethene		0.077		0.35		1.1					0.005 U
MW-5S	Trichloroethene		0.013		0.041		0.099					0.005 U
MW-5S	Vinyl chloride		0.012		0.06		0.16					0.005 U
MW-11S	Iron					0.18				0.1 U		
MW-11S	Manganese					1.26				1.13		
MW-11S	Sodium					18.6				18.1		
MW-11S	cis-1,2-Dichloroethene			0.35 D		0.4 D		0.33		0.34		
MW-11S	Trichloroethene			3 D		2.8 D		2.6		3		
MW-11S	Vinyl chloride			0.027		0.029		0.13 U		0.13 U		

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	9/14/2009	3/24/2010	3/25/2010	9/13/2010	9/14/2010	3/21/2011	3/22/2011	9/26/2011	9/27/2011	9/28/2011	9/29/2011
MW-16S	Iron					0.21			0.64			
MW-16S	Manganese					0.03			0.013			
MW-16S	Sodium					7.6			7.8			
MW-16S	cis-1,2-Dichloroethene			0.005 U		0.005 U		0.005 U	0.005 U			
MW-16S	Trichloroethene			0.005 U		0.005 U		0.005 U	0.005 U			
MW-16S	Vinyl chloride			0.005 U		0.005 U		0.005 U	0.005 U			
MW-17D	Iron				3.82						7.53	
MW-17D	Manganese				0.305						0.903	
MW-17D	Sodium				32.2						27.2	
MW-17D	cis-1,2-Dichloroethene				0.005 U						0.005 U	
MW-17D	Trichloroethene				0.005 U						0.005 U	
MW-17D	Vinyl chloride				0.005 U						0.005 U	
MW-17S	Iron				0.26						0.83	
MW-17S	Manganese				0.233						0.207	
MW-17S	Sodium				51.8						59.2	
MW-17S	cis-1,2-Dichloroethene				0.058						0.059	
MW-17S	Trichloroethene				0.012						0.012	
MW-17S	Vinyl chloride				0.005 U						0.005 U	
MW-18D	Iron				13.4						10.4	
MW-18D	Manganese				0.326						0.591	
MW-18D	Sodium				20.9						18.1	
MW-18D	cis-1,2-Dichloroethene				0.005 U						0.005 U	
MW-18D	Trichloroethene				0.005 U						0.005 U	
MW-18D	Vinyl chloride				0.005 U						0.005 U	
MW-18S	Iron				0.77						1.34	
MW-18S	Manganese				0.026						0.034	
MW-18S	Sodium				11.3						6.1	
MW-18S	cis-1,2-Dichloroethene				0.0059						0.005 U	
MW-18S	Trichloroethene				0.0057						0.005 U	
MW-18S	Vinyl chloride				0.005 U						0.005 U	

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/14/2012	3/15/2012	9/4/2012	9/5/2012
CW-3A	Iron				0.1 U
CW-3A	Manganese				0.024
CW-3A	Sodium				42.8
CW-3A	cis-1,2-Dichloroethene				0.013
CW-3A	Trichloroethene				0.082
CW-3A	Vinyl chloride				0.005 U
CW-3B	Iron				0.15
CW-3B	Manganese				0.033
CW-3B	Sodium				22.5
CW-3B	cis-1,2-Dichloroethene				0.072
CW-3B	Trichloroethene				0.18
CW-3B	Vinyl chloride				0.005 U
CW-4A	Iron				0.57
CW-4A	Manganese				0.526
CW-4A	Sodium				16
CW-4A	cis-1,2-Dichloroethene				0.005 U
CW-4A	Trichloroethene				0.005 U
CW-4A	Vinyl chloride				0.005 U
MW-3D	Iron				0.1 U
MW-3D	Manganese				0.01 U
MW-3D	Sodium				18.5
MW-3D	cis-1,2-Dichloroethene				0.0055
MW-3D	Trichloroethene				0.005 U
MW-3D	Vinyl chloride				0.005 U
MW-3S	Iron				0.1 U
MW-3S	Manganese				0.01 U
MW-3S	Sodium				33.7
MW-3S	cis-1,2-Dichloroethene				0.005 U
MW-3S	Trichloroethene				0.005 U
MW-3S	Vinyl chloride				0.005 U
MW-4D	Iron			0.48	
MW-4D	Manganese			0.729	
MW-4D	Sodium			7.6	
MW-4D	cis-1,2-Dichloroethene		0.38	0.54 D	
MW-4D	Trichloroethene		0.013 U	0.013 U	
MW-4D	Vinyl chloride		0.12	0.15	
MW-5D	Iron			0.33	
MW-5D	Manganese			0.484	
MW-5D	Sodium			6.4	
MW-5D	cis-1,2-Dichloroethene		0.94	0.23 D	
MW-5D	Trichloroethene		0.082	0.0095	
MW-5D	Vinyl chloride		0.11	0.034	
MW-5S	Iron			0.13	
MW-5S	Manganese			0.112	
MW-5S	Sodium			7	
MW-5S	cis-1,2-Dichloroethene	0.2 D		0.3	
MW-5S	Trichloroethene	0.04		0.05	
MW-5S	Vinyl chloride	0.03		0.042	
MW-11S	Iron				0.1
MW-11S	Manganese				1.12
MW-11S	Sodium				20.2
MW-11S	cis-1,2-Dichloroethene		0.027		0.36
MW-11S	Trichloroethene		2.3		3.3
MW-11S	Vinyl chloride		0.13 U		0.13 U

Please see page 20 for notes.

Table D-1

Analytical Results for Time Trend Graphs 1998 - 2012
Wellsville/Andover Landfill
Wellsville, New York
(mg/L)

Location	Parameter	3/14/2012	3/15/2012	9/4/2012	9/5/2012
MW-16S	Iron				0.1 U
MW-16S	Manganese				0.01 U
MW-16S	Sodium				8.6
MW-16S	cis-1,2-Dichloroethene	0.005 U			0.005 U
MW-16S	Trichloroethene	0.005 U			0.005 U
MW-16S	Vinyl chloride	0.005 U			0.005 U
MW-17D	Iron			9.25	
MW-17D	Manganese			0.973	
MW-17D	Sodium			28.4	
MW-17D	cis-1,2-Dichloroethene			0.005 U	
MW-17D	Trichloroethene			0.005 U	
MW-17D	Vinyl chloride			0.005 U	
MW-17S	Iron			0.51	
MW-17S	Manganese			0.123	
MW-17S	Sodium			63	
MW-17S	cis-1,2-Dichloroethene			0.077	
MW-17S	Trichloroethene			0.015	
MW-17S	Vinyl chloride			0.005 U	
MW-18D	Iron			9.18	
MW-18D	Manganese			0.547	
MW-18D	Sodium			21.6	
MW-18D	cis-1,2-Dichloroethene			0.005 U	
MW-18D	Trichloroethene			0.005 U	
MW-18D	Vinyl chloride			0.005 U	
MW-18S	Iron			0.49	
MW-18S	Manganese			0.216	
MW-18S	Sodium			8.7	
MW-18S	cis-1,2-Dichloroethene			0.008	
MW-18S	Trichloroethene			0.006	
MW-18S	Vinyl chloride			0.005 U	

Notes:
U - Concentration not detected at specified detection limit
E - Concentration exceeded calibration range associated with analysis
B - Analyte detected in associated method blank
D - Diluted sample
J - Estimated value