FINAL
FIELD ACTIVITIES REPORT
SITE MANAGEMENT MEDIA SAMPLING
SOUTH HILL DUMP
SITE NO. 712009

WORK ASSIGNMENT NO. D007619-29

Prepared for:

New York State Department of Environmental Conservation

Division of Environmental Remediation
Remedial Bureau E
Albany, New York

Prepared by:

MACTEC Engineering and Consulting, P.C.
Portland, Maine

MACTEC: 3617137309

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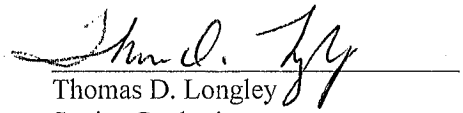

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

cis-1,2-DCE	cis-1,2-dichloroethene
EC	engineering control
FAP	Field Activities Plan
FDR	field data record
ft	foot (or feet)
IC	institutional control
MACTEC	MACTEC Engineering and Consulting, P.C.
mg/L	milligram(s) per liter
NYSDEC	New York State Department of Environmental Conservation
PCB	polychlorinated biphenyl
RA	remedial action
Report	Field Activities Report
ROD	Record of Decision
Site	South Hill Dump Site
SM	Site Management
SMP	Site Management Plan
TCE	trichloroethene
µg/L	microgram(s) per liter
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

1.0 INTRODUCTION AND REQUIRED SITE CONTROLS

1.1 INTRODUCTION

MACTEC Engineering and Consulting, P.C. (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC), is submitting this Field Activities Report, Site Management (SM) Media Sampling (Report) for the South Hill Dump Site (Site) in the Town of Cortlandville, Cortland County, New York (Figure 1.1). This Report summarizes the March 2016 sampling event performed at the Site. The Site is currently listed as a Class 2 Inactive hazardous waste site - Site No. 712009 - in the Registry of Hazardous Waste Sites in New York State. This Report is being submitted in accordance with Work Assignment No. D007619-29, and with the Superfund Standby Contract between MACTEC and the NYSDEC. The Site is under SM in accordance with the Record of Decision (ROD) dated January 2008 (NYSDEC, 2008a).

The Site is located in the Town of Cortlandville, Cortland County; approximately two miles south of the Village of McGraw, on the south side of South Hill Road (see Figure 1.1). Much of the property is steeply sloped. The area surrounding the Site includes wooded areas, orchards, and active and former farm fields. A mix of forested areas and apple orchards are located east of the Site. The topography in this area slopes to the south, toward an unnamed stream located approximately 1/4 mile south of the Site (MACTEC, 2006).

Two residential parcels border the Site and are located along the southern and eastern sides of South Hill Road; the closest residence is less than ¼ mile southwest of the Site. The area west and north of the Site consists primarily of active farm land. A former apple orchard is located farther west. A mix of meadow, farm land, apple orchards, and forest area is located northeast of the Site. The Tioughnioga River is located within two miles southwest of the Site. The unnamed stream located south and east of the Site discharges to the Tioughnioga River via Hoxie Gorge Creek.

The Site was operated as a municipal waste disposal facility by the Town of Cortlandville from the early 1960s until 1972, although it is reported that local residents used the Site for trash disposal as early as 1949. During its years of operation, wastes were received from the Village of McGraw and the Towns of Cortlandville and Solon, as well as local industry. Access to the Site was reportedly unrestricted during this time. It has also been reported that waste was often permitted to burn during landfill operation, and

that at one time a waste oil pit may have existed. Operations are reported to have involved pushing waste over the working face of the landfill with some spreading and compaction. Cover material was reportedly spread one or more times per week. Prior to the remedial action (RA) described in this report, waste observed protruding from the surface of the landfill across much of the Site included road construction debris, brush, stumps, tires, white metal, automobile parts, and miscellaneous industrial waste materials. Numerous decomposed drums were present across many areas of the landfill (MACTEC, 2006).

1.2 SUMMARY OF THE REMEDIAL ACTION

A RA was conducted at the Site in 2011 and 2012 in accordance with the ROD and as documented in the Final Engineering Report (MACTEC, 2013a).

The RA included the following activities:

- Installation of stabilized vehicle entrance
- Installation of perimeter erosion and sedimentation controls
- Clearing of trees and brush above the ground surface
- Grubbing of areas within the limit of grading, and disposal of grubbings on-site (beneath the new landfill cover)
- Excavation of on-site waste outside the new solid waste boundary and consolidation within the new solid waste boundary
- Decommissioning of two existing groundwater monitoring wells (MW-3S and MW-3B)
- Installation of additional erosion and sedimentation controls and measures, including a sedimentation basin, in preparation for landfill grading and soil cover installation
- Grading of the landfill within the new solid waste boundary to achieve subgrade
- Excavation for installation of landfill storm water controls (slope benches and downdrains) within the new solid waste boundary
- Removal of bulky waste items uncovered during the course of waste consolidation and landfill grading, with off-site disposal of removed bulky wastes
- Characterization and offsite disposal of uncovered buried waste drums, drum nests, and drum remnants
- Installation of 24 inch landfill cover system including associated landfill storm water controls
- Installation of landfill gas vents
- Installation of perimeter access road with water bars
- Installation of perimeter storm water controls including riprap drainage channels and culverts
- Conversion of the sedimentation basin to a storm water detention basin

- Installation of two new groundwater monitoring wells (MW-3SR and MW-3BR)
- Seeding and mulching of all disturbed areas within the limit of work.

RA activities for the Site were completed in December 2012.

1.2.1 Remaining Contamination

Remaining contamination at the Site consists primarily of municipal and industrial wastes beneath the constructed landfill cover.

1.2.2 Engineering and Institutional Controls

Because remaining contamination is present at this Site, engineering controls (ECs) and institutional controls (ICs) have been implemented to protect public health and the environment for the applicable future use. The controlled property has the following ECs:

- a cover system placed over the landfilled waste
- site access controls
- surface water drainage conveyance
- landfill gas vents

A series of ICs are required to implement, maintain and monitor these ECs. The Environmental Easement requires compliance with these ICs, to ensure that:

- All ECs must be operated and maintained as specified in the SM Plan (SMP)
- All ECs on the Site must be inspected and certified at a frequency and in a manner defined in the SMP
- Environmental monitoring must be performed as defined in the SMP
- Data and information pertinent to SM for the controlled property must be reported at the frequency and in a manner defined in the SMP
- On-site environmental monitoring devices, including but not limited to groundwater monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP.

This Report describes SM field activities conducted in March 2016 in accordance with the SMP (MACTEC, 2013b) for the Site.

This Report is organized as follows:

- Section 2.0 describes the field activities conducted at the Site in accordance with the SMP
- Section 3.0 presents a summary of field activities and laboratory analytical results
- Section 4.0 provides a summary and conclusion of the field activities
- Section 5.0 includes the references discussed in this report.

2.0 FIELD ACTIVITIES

The objectives of the field activities and associated sampling is to document that the established controls required by the SMP are operational and effective, that the SMP is being implemented and conducted accordingly, and that the remedy remains protective of the environment and/or public health. This requirement includes that Site contaminants be monitored in groundwater, surface water, sediment, and leachate seep. The analytical results of these samples provide a measure of the groundwater quality when compared to the post-remedy baseline conditions obtained in 2013 and document changes to onsite groundwater quality. These results will help determine if additional RAs may be warranted.

The performance of this field work was governed by MACTEC's Field Activities Plan (FAP) (MACTEC, 2016) submitted to the NYSDEC in February 2016. The field work was conducted following the procedures described herein and as outlined in the Program Quality Assurance Program Plan (MACTEC, 2011a) and Program Health and Safety Plan (MACTEC, 2011b). The NYSDEC call-out contractor TestAmerica Laboratories, Inc. provided laboratory analytical services.

The 2016 field work conducted at the Site included completing the following four tasks:

- Performing a monitoring well and inventory repair survey. This was done to document the condition and integrity of the Site monitoring wells.
- Obtaining a synoptic round of water level measurements from the eleven Site monitoring wells.
- Collecting "no purge" groundwater samples from the eleven monitoring wells.
- Collecting one surface water and one sediment sample from the storm water detention basin outfall located at the southern end of the Site.

Additionally, one seep sample (SEEP-1) was scheduled to be collected from the seep located at the eastern side of the landfill. This seep did not have enough water available for sampling at the time of the sampling event.

The remainder of Section 2.0 describes the field activities conducted in accordance with the SMP. Used disposable equipment and personal protective clothing generated while conducting the fieldwork was double-bagged in polyethylene trash bags, sealed, and disposed of as non-hazardous municipal solid waste.

2.1 MONITORING WELL AND INVENTORY REPAIR SURVEY

A groundwater monitoring well inventory was completed to document the condition and physical features of the Site monitoring wells. Refer to Subsection 3.3 of this report for results of the well inventory.

2.2 SYNOPTIC WATER LEVEL MEASUREMENTS

Prior to groundwater sampling, a synoptic round of water level measurements was collected from the eleven groundwater monitoring wells at the Site. Water level measurements were collected using a water-level indicator, and were measured to the surveyed top of riser (or to the top of casing for wells without riser pipes) and referenced to mean sea level. Water levels were recorded to the nearest 0.01 foot (ft).

2.3 GROUNDWATER SAMPLING

Groundwater sampling activities were conducted on March 1 and 2, 2016. Groundwater samples were collected from the eleven monitoring locations (upgradient wells MW-1S and MW-1B; on-Site/cross-gradient wells MW-3SR2, MW-3BR2, MW-2S, MW-2B, MW-2D, MW-3SR, and MW-3BR; and downgradient wells MW-4S, and MW-4B) to evaluate concentrations of Site contaminants in groundwater. Sampling locations are shown on Figure 2.1.

The wells were sampled using HydraSleeve 'no purge' sampling techniques as described in the FAP (MACTEC, 2011a). Table 2.1 presents the sample identification and analytical methods for samples collected at the Site. At the time of collection and because a 'no purge' collection technique was used, turbidity was the only field parameter that was measured. These measurements and other data were documented on a Field Data Record (FDR) – HydraSleeve Sampling form which is included in Appendix A. The HydraSleeves were deployed during the last sampling round performed in December 2014. After sample collection, new HydraSleeves were deployed in all the monitoring wells for the next round of sampling.

All groundwater samples were submitted to an off-Site laboratory (TestAmerica Laboratories, Inc., Buffalo, NY) for volatile organic compounds (VOCs) and metals by United States Environmental Protection Agency (USEPA) methods 8260C and 6010C, respectively, following the NYSDEC Analytical Services Protocols (NYSDEC, 2005).

2.4 SURFACE WATER AND SEDIMENT SAMPLING

Concurrent with groundwater sampling, one surface water and one sediment sample were collected from the storm water detention basin outfall located at the southern end of the Site (see Figure 2.1). The FDR for these samples is included in Appendix A. The samples were submitted for offsite laboratory analysis for VOCs (USEPA method 8260C), metals (6010C), and polychlorinated biphenyls (PCBs) (8082A).

2.5 LEACHATE SEEP SAMPLING

A groundwater seep, on the eastern side of the landfill, was encountered during the RA in 2012. NYSDEC subsequently collected a sample of the seep. The analytical results of the seep sample indicated the presence of VOCs, semi-VOCs, and metals. Although the seep, as surface water, was not observed to be migrating offsite during the RA (nor in March 2016), NYSDEC decided to eliminate the expression of the groundwater seep at the ground surface to the extent practical. Thus, the RA subcontractor excavated saturated soil and solid waste in seep areas and replaced those materials with a combination of compacted select borrow and a supporting geosynthetic material (i.e., geogrid) to augment placement of the subgrade and prevent surface expression of the seep.

Relatively smaller additional groundwater seeps were subsequently observed at the ground surface at a few locations downgradient from the original seep on the eastern side of the landfill. Saturated soil was excavated to fractured shale at those groundwater seep locations, and rip rap was backfilled in the excavation during the RA to provide a structural surface on which to backfill compacted select borrow.

During the landfill inspection on July 19, 2013, minor groundwater seepage was recorded at the surface near the MW-3 cluster, at the southeast corner of the Site. The observed seepage amount was a fraction of the original observed seepage. It was recommended in the November 2013 Field Activities Report (MACTEC, 2013c) that a sample of the seep be collected during future monitoring events in addition to field parameters. Analytical results could then be compared to the historic seep analytical results (February 14, 2012, by NYSDEC) and to the results from nearby wells MW-3SR and MW-3BR.

At the time of the 2016 fieldwork presented in this Report, there was no active seep observed at the southeast portion of the Site. Therefore, no leachate seep sample was collected. This is the second consecutive post-RA sampling event in which a seep sample was not collected due to lack of water being present.

3.0 FIELD ACTIVITIES RESULTS

3.1 MONITORING WELL AND INVENTORY REPAIR SURVEY

A Well Inspection Checklist documenting the condition and physical details of the wells is included in Appendix A. All wells were secure and clearly labeled. The groundwater monitoring wells were observed to be in generally good condition. It was noted that the top section of polyvinyl chloride well riser in MW-1B is loose at the top, and that repairs are not recommended at this time.

3.2 SYNOPTIC WATER LEVEL MEASUREMENTS

The depth to water (from the top of riser or from the top of casing for wells without pipe risers) and groundwater elevation for each groundwater monitoring well are included in Table 3.1. The groundwater table elevation decreases more than 122 ft in the overburden wells and more than 129 ft in the bedrock wells from the MW-1 cluster (upgradient, offsite wells located northwest of South Hill Road) to the MW-4 cluster (downgradient wells located south of the detention basin). Groundwater flow is to the southeast, which is largely unchanged from prior measurements. See Figures 3.1 and 3.2 for groundwater potentiometric surfaces in the overburden and bedrock, respectively.

3.3 GROUNDWATER MONITORING RESULTS

Reported VOC concentrations in groundwater for the March 2016 monitoring event included trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE). TCE was detected in four wells, MW-3SR (3.1 micrograms per liter [ug/L]), MW-3SR2 (200 ug/L), MW3BR2 (110 ug/L), and MW-4B (5.6/6.5 ug/L). The class GA groundwater standard (NYSDEC, 2008b) for TCE (5 ug/L) was exceeded at MW-3SR2, MW-3BR2, and in both the sample and duplicate sample at MW-4B. Cis-1,2-DCE was detected in three wells, at MW-3SR2 (21 ug/L) and MW-3BR2 (12 ug/L) (both above the groundwater standard of 5 ug/L), and at MW-4B (0.85J/1.0 ug/L). VOCs were not detected in the upgradient wells MW-1S and MW-1B, the cross-gradient wells MW-2B, MW-2D, MW-2S, and MW-3BR, or at the downgradient well MW-4S. VOC concentrations reported for the March 2016 monitoring event are consistent with those observed in 2014. See Table 3.2 for comparisons of TCE and Table 3.3 for comparisons of cis-1,2-DCE concentrations in Site wells for the last five monitoring events.

For metals, detections of iron exceeded the groundwater standard (0.3 milligrams per liter [mg/L]) at all of the eleven monitoring wells sampled in 2016. Iron was detected at an estimated concentration of 529 mg/L in MW-3BR (Table 3.4). Detections of manganese exceeded the groundwater standard (0.3 mg/L) at MW-3BR, at MW-3BR2, and at MW-3SR2.

Detected contaminants in groundwater for the March 2016 event are summarized in Table 3.5. Figure 3.3 presents groundwater detections for each well that has been sampled since completion of the RA in December 2012. Detections depicted on Figure 3.3 include three sampling events, the first being for July/August 2013, the second being for December 2014, and the third being for March 2016. The Chemistry Review and complete analytical results for the March 2016 sampling event are included in Appendix B.

3.4 SURFACE WATER AND SEDIMENT RESULTS

Surface water analytical results for SW-1 are compared to Class C surface water criteria (NYSDEC, 2008b). There were no VOCs detected in the surface water sample collected in the March 2016 monitoring event. Several metals were detected, but none exceeded the criteria. PCBs were not detected in the surface water sample. Analytical results for the surface water sample are summarized in Table 3.6.

Sediment analytical results were compared to NYSDEC sediment criteria (NYSDEC, 1999). No VOCs were detected in the sediment sample SED-1. Several metals were detected, but none exceeded the criteria. PCBs were not detected in the sediment sample. Analytical results for the sediment sample are summarized in Table 3.7.

4.0 SUMMARY AND CONCLUSIONS

4.1 SUMMARY

The field activities described in this report were conducted to provide the contaminant distribution at the landfill Site, to provide results that can be compared to the post-remedy baseline conditions obtained in 2013 for RA evaluation, and to document changes to onsite groundwater quality. Groundwater monitoring has been completed at the Site for the third time since 2001. Two relatively new monitoring wells, MW-3SR2 and MW-3BR2 installed in June of 2014, were sampled for the second time, and both show similar concentrations of TCE and cis-1,2-DCE in these two events. These wells were located to be in a cross-gradient-to-downgradient location of the Site and were placed in a successful attempt to more closely replicate the groundwater flow path position (i.e., locations) of MW-3S/3B, which were decommissioned in 2011. Wells MW-3SR and MW-3BR were installed as earlier replacements for MW-3S/B, but contaminant results from these wells showed them to be inadequately located for monitoring purposes. Three of the eleven Site wells (MW-3SR2 is an overburden well while MW-3BR2 and MW-4B are bedrock wells) show TCE detections above the groundwater standard with concentrations being similar to the 2014 sampling event. Two wells (MW-3SR2 and MW-3BR2) had cis-1,2-DCE detections above the groundwater standard, and iron and manganese were detected at above the groundwater standards in 11 and three wells, respectively. Detected contaminants have not been historically detected in the off-Site upgradient wells MW-1S and MW-1B. Iron, however, was detected in both these wells at above the groundwater standard for the first time in this most recent sampling round.

4.2 CONCLUSIONS

The groundwater, surface water, and sediment sample results provide a reliable comparison to the post-remedy baseline for contaminant distribution at the landfill. Concentrations of Site contaminants detected in groundwater samples collected in March 2016 are similar to historic sampling results. In general, TCE and cis-1,2-DCE concentrations remain consistent with past sampling events, but at lower levels than those observed in 2001. The newer shallow overburden and bedrock well pair MW-3SR2 and MW-3BR2 show concentrations for TCE and cis-1,2-DCE at consistent levels relative to the decommissioned MW-3S/3B well pair.

4.3 RECOMMENDATIONS

For the second consecutive sampling event, environmental sampling results indicate that the existing monitoring well network allows for similar comparisons to be made between the post-remedy baseline and the required ongoing contaminant distribution sampling events. Therefore, it is recommended that environmental monitoring and reporting continue at the frequency and in a manner as defined in the SMP. The SM requirements for monitoring the performance and effectiveness of the remedial measures completed at the Site include semi-annual Site inspections and environmental monitoring at 15-month intervals. Sample collection at the eleven monitoring wells, the one surface water and sediment location, and the one seep location should continue during future events of the environmental monitoring program.

5.0 REFERENCES

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NYSDEC, 2008b. New York Codes, Rules, and Regulations, Chapter X, Part 703: Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (http://www.dec.ny.gov/regs/4590.html), Effective February 16, 2008.

NYSDEC, 2005. "Analytical Services Protocols"; 7/05 Edition; July 2005.

NYSDEC, 1999. Division of Fish, Wildlife, and Marine Resources. *Technical Guidance for Screening Contaminated Sediments.* January 25, 1999.

TABLES

Table 2.1: Sample IDs and Analytical Methods

Well I.D.	Sample I.D.	Analytical Method			Sample Method
		VOCs (8260C)	Metals (6010C)	PCBs (8082A)	
MW-1S	MW-1S	X	X		HydraSleeve
MW-1S	MW-1SDup	X	X		HydraSleeve
MW-1S	MW-1SMS	X	X		HydraSleeve
MW-1S	MW-1SMSD	X	X		HydraSleeve
MW-1B	MW-1B	X	X		HydraSleeve
MW-2S	MW-2S	X	X		HydraSleeve
MW-2B	MW-2B	X	X		HydraSleeve
MW-2D	MW-2D	X	X		HydraSleeve
MW-3SR	MW-3SR	X	X		HydraSleeve
MW-3BR	MW-3BR	X	X		HydraSleeve
MW-3SR2	MW-3SR2	X	X		HydraSleeve
MW-3BR2	MW-3BR2	X	X		HydraSleeve
MW-4S	MW-4S	X	X		HydraSleeve
MW-4B	MW-4B	X	X		HydraSleeve
MW-4B	MW-4B DUP	X	X		HydraSleeve
MW-4B	MW-4B MS	X	X		HydraSleeve
MW-4B	MW-4B MSD	X	X		HydraSleeve
SW-1*	SW-1	X	X	X	Grab
SED-1	SED-1	X	X	X	Grab
SEEP-1	SEEP-1	--	--	--	Grab

Sampling activities were conducted on March 1 and 2, 2016
-- = the seep did not have enough water to sample at time of sampling
* = A hardness sample was also collected from this surface water location

Table 3.1: Groundwater Elevation Survey, March 2016

Well ID	Casing Elevation (ft)	Riser Elevation (ft)	Ground Elevation (ft)	Total Depth of Well (ft, below measuring point)	Comments	Screen (ft, bgs)	Depth to Water (ft, below measuring point)	Groundwater Elevation (ft)
MW-1S	1670.85	1670.95	1668.10	17.9	2-inch Overburden	10-ft Screen (5'-15')	9.77	1661.18
MW-1B	1671.65	1671.35	1668.50	37.9	2-inch Bedrock	10-ft Screen (25'-35')	22.28	1649.07
MW-2B	1574.85	No Riser	1573.40	44.0	3-inch Open Hole Bedrock	Open from 31.5'-41.5'	8.40	1566.45
MW-2D	1576.30	1575.00	1572.00	27.0	2-inch Overburden	10-ft Screen (14'-24')	7.89	1567.11
MW-2S	1575.40	1575.45	1572.60	12.9	2-inchOverburden	5-ft Screen (5'-10')	7.85	1567.60
*MW-3BR	1562.61	No Riser	1559.83	43.9	3-inch Open Hole Bedrock	Open from 31'-41'	8.34	1554.27
*MW-3SR	1563.68	1563.04	1561.35	25.3	2-inch Overburden	5-ft Screen (19'-24')	3.08	1559.96
**MW-3BR2	1565.25	No Riser	1565.61	24.49	4-inch Open Hole Bedrock	Open from 14' - 26'	0.00	1565.25
**MW-3SR2	Flush-to-Ground	1565.76	1566.02	11.04	2-inch Overburden	5-ft Screen (6'-11')	0.00	1565.76
MW-4B	1545.45	No Riser	1541.90	48.4	3-inch Open Hole Bedrock	Open from 36.6'-46.6'	26.30	1519.15
MW-4S	1545.45	1545.40	1542.60	18.8	2-inch Overburden	10-ft Screen (6'-16')	7.13	1538.27

All Data taken from "Bedrock Monitoring Well Construction Log 1997", March/April 1997, SJB Services, Inc., Except where noted*/**
*Monitoring Wells Installed October 2012 - Data taken from Boring/Well Development Logs, October 2012, SJB Services, Inc.
** Monitoring Wells Installed June 2014 - Data Determined by MACTEC
ft = Feet
bgs = below ground surface
Depth to Water measured on March 1 and 2, 2016

Table 3.2: Historic Concentrations of TCE in Site Monitoring Wells

	MW-1S	MW-1B	MW-2B	MW-2D	MW-2S	MW-3S	MW-3SR	MW-3B	MW-3BR	MW-3SR2	MW-3BR2	MW-4S	MW-4B
	Upgradient Wells		On-Site/Cross-Gradient Wells									Downgradient Wells	
1997	ND	ND	4	ND	ND	**80**	-	**540**	-	-	-	ND	4
2001	ND	ND	ND	ND	ND	**200**	-	**360**	-	-	-	ND	**7**
2013	ND	ND	2.4	ND	ND	*	**20**	*	ND	-	-	ND	**14**
2014	ND	ND	ND	ND	ND	*	3.6	*	ND	**200**	**86**	ND	2.1J/**5.1J**
2016	ND	ND	ND	ND	ND	*	3.1	*	ND	**200**	**110**	ND	**5.6/6.5**

Concentrations in ug/L
Class GA Groundwater Standard for TCE is 5 ug/L
ND = non-detect
- = well not yet installed
*MW-3S replaced by MW-3SR, and MW-3B replaced by MW-3BR
J = estimated value
shaded and bold results indicate exceedance of standard
2.1J/5.1J = shows sample and duplicate sample results

Table 3.3: Historic Concentrations of cis-1,2-DCE in Site Monitoring Wells

	MW-1S	MW-1B	MW-2B	MW-2D	MW-2S	MW-3S	MW-3SR	MW-3B	MW-3BR	MW-3SR2	MW-3BR2	MW-4S	MW-4B
	Upgradient Wells		On-Site/Cross-Gradient Wells									Downgradient Wells	
1997	ND	ND	ND	ND	ND	**18**	-	**56**	-	-	-	ND	4
2001	ND	ND	ND	ND	ND	**264**	-	**97**	-	-	-	ND	ND
2013	ND	ND	ND	ND	ND	*	ND	*	ND	-	-	ND	2.4
2014	ND	ND	ND	ND	ND	*	ND	*	ND	**22**	**7.1**	ND	0.83J/1.5J
2016	ND	ND	ND	ND	ND		ND		ND	**21**	**12**	ND	0.85J/1

Concentrations in ug/L
Class GA Groundwater Standard for cis-1,2-DCE is 5 ug/L
ND = non-detect
- = well not yet installed
*MW-3S replaced by MW-3SR, and MW-3B replaced by MW-3BR
J = estimated value
shaded and bold results indicate exceedance of standard
0.83J/1.5J = shows sample and duplicate sample results

Table 3.4: Historic Concentrations of Iron in Site Monitoring Wells

	MW-1S	MW-1B	MW-2B	MW-2D	MW-2S	MW-3S	MW-3SR	MW-3B	MW-3BR	MW-3SR2	MW-3BR2	MW-4S	MW-4B
	Upgradient Wells		On-Site/Cross-Gradient Wells									Downgradient Wells	
1997	ND	ND	**47.6**	**8.6**	NR	**2.0**	-	**3.9**	-	-	-	**0.8**	**3.2**
2013	ND	ND	**4.1**	**0.38**	ND	*	ND	*	**8.3**	-	-	ND	**1.1**
2014	0.17J	0.056J	**28.4J**	**1.8J**	**14.3J**	*	**0.39J**	*	**8.8J**	0.1J	**17.8J**	0.27J	**21.7J/28.2J**
2016	**3.8J**	**1.7J**	**17.4J**	**0.96J**	**7.3J**	*	**5.8J**	*	**529J**	**27.9J**	**109J**	**0.62J**	**12.4J/45.6J**

Concentrations in ug/L
Class GA Groundwater Standard for iron is 0.3 mg/L
ND = non-detect
NR = not reported or sampled
- = well not yet installed
*MW-3S replaced by MW-3SR, and MW-3B replaced by MW-3BR
J = estimated value
shaded and bold results indicate exceedance of standard
21.7J/28.2J = shows sample and duplicate sample results

Table 3.5: Detected Contaminants in Groundwater, March 2016

			Location	MW-1B		MW-1S		MW-2B		MW-2D		MW-2S		MW-3BR	
			Sample Date	3/2/2016		3/2/2016		3/2/2016		3/2/2016		3/2/2016		3/1/2016	
			Sample ID	MW-1B		MW-1S		MW-2B		MW-2D		MW-2S		MW-3B	
			Qc Code	FS		FS		FS		FS		FS		FS	
Class	**Parameter**	**GA GW**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Cis-1,2-Dichloroethene	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U
VOCs	Trichloroethene	5	µg/L	1	U	1	U	1	U	1	U	1	U	1	U
Metals	Aluminum	NL	mg/L	**0.88**		**4.1**		0.2	U	**0.73**		**6.6**		0.2	U
Metals	Arsenic	0.025	mg/L	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U	0.015	U
Metals	Barium	1	mg/L	**0.03**	J	**0.046**	J	**0.092**	J	**0.035**	J	**0.065**	J	**0.13**	J
Metals	Beryllium	0.003	mg/L	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U
Metals	Calcium	NL	mg/L	**20.8**	J	**18**	J	**30.7**	J	**55.4**	J	**74.2**	J	**9.4**	J
Metals	Chromium	0.05	mg/L	**0.0035**	J	**0.0044**		**0.0016**	J	**0.0029**	J	**0.013**		0.004	U
Metals	Cobalt	NL	mg/L	0.004	U	**0.0013**	J	0.004	U	0.004	U	**0.0023**	J	0.004	U
Metals	Copper	0.2	mg/L	**0.0025**	J	**0.0034**	J	**0.0051**	J	0.01	U	**0.0067**	J	**0.008**	J
Metals	Iron	0.3	mg/L	**1.7**	J	**3.8**	J	**17.4**	J	**0.96**	J	**7.3**	J	**529**	J
Metals	Magnesium	35	mg/L	**4.7**		**4.8**		**7.5**		**13.6**		**15.1**		**3.5**	
Metals	Manganese	0.3	mg/L	**0.023**	J	**0.061**	J	**0.25**	J	**0.037**	J	**0.15**	J	**7**	J
Metals	Nickel	0.1	mg/L	**0.0018**	J	**0.0034**	J	**0.0036**	J	0.01	U	**0.0072**	J	**0.062**	
Metals	Potassium	NL	mg/L	**0.9**		**1.5**		**1**		**1.2**		**2.1**		**3.3**	
Metals	Sodium	20	mg/L	**7.7**		**6.8**		**4.4**		**4.3**		**14.1**		**18.5**	
Metals	Vanadium	NL	mg/L	**0.0024**	J	**0.0046**	J	0.005	U	**0.0015**	J	**0.009**		0.005	U
Metals	Zinc	2	mg/L	**0.02**		**0.013**		**0.0029**	J	**0.0037**	J	**0.042**		**0.0059**	J

Notes

NL = Not Listed

Qualifiers:

U = not detected at the reporting limit

J = estimated concentration

QC Codes:

FS = normal field sample

FD = field duplicate sample

1.7 shaded and bold result indicates exceedance of standard

4.7 bold indicates compound detected

mg/L = milligram per liter

µg/L = microgram per liter

Table 3.5: Detected Contaminants in Groundwater, March 2016

			Location	MW-3BR2		MW-3SR		MW-3SR2		MW-4B		MW-4B		MW-4S	
			Sample Date	3/1/2016		3/1/2016		3/2/2016		3/1/2016		3/1/2016		3/1/2016	
			Sample ID	MW-3BR2		MW-3S		MW-3SR2		MW-4B		MW-4B DUP		MW-4S	
			Qc Code	FS		FS		FS		FS		FD		FS	
Class	**Parameter**	**GA GW**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Cis-1,2-Dichloroethene	5	µg/L	**12**		1	U	**21**		**0.85**	J	**1**		1	U
VOCs	Trichloroethene	5	µg/L	**110**		**3.1**		**200**		**5.6**		**6.5**		1	U
Metals	Aluminum	NL	mg/L	**0.19**	J	**3.9**		**18.2**		0.2	U	0.2	U	**0.3**	
Metals	Arsenic	0.025	mg/L	0.015	U	0.015	U	**0.0083**	J	0.015	U	0.015	U	0.015	U
Metals	Barium	1	mg/L	**0.25**	J	**0.098**	J	**0.32**	J	**0.036**	J	**0.082**	J	**0.036**	J
Metals	Beryllium	0.003	mg/L	0.002	U	0.002	U	**0.00067**	J	0.002	U	0.002	U	0.002	U
Metals	Calcium	NL	mg/L	**81.4**	J	**67.1**	J	**97.6**	J	**18.6**	J	**32**	J	**72.7**	J
Metals	Chromium	0.05	mg/L	**0.001**	J	**0.0064**		**0.026**		0.004	UJ	**0.0041**	J	**0.0017**	J
Metals	Cobalt	NL	mg/L	0.004	U	**0.0024**	J	**0.011**		0.004	U	0.004	U	0.004	U
Metals	Copper	0.2	mg/L	**0.0026**	J	**0.0051**	J	**0.021**		**0.0017**	J	**0.0053**	J	0.01	U
Metals	Iron	0.3	mg/L	**109**	J	**5.8**	J	**27.9**	J	**12.4**	J	**45.6**	J	**0.62**	J
Metals	Magnesium	35	mg/L	**16.1**		**14.6**		**23.2**		**6.7**		**7.6**		**11.9**	
Metals	Manganese	0.3	mg/L	**0.66**	J	**0.29**	J	**0.72**	J	**0.1**	J	**0.25**	J	**0.019**	J
Metals	Nickel	0.1	mg/L	**0.0065**	J	**0.0056**	J	**0.027**		0.01	U	**0.0049**	J	0.01	U
Metals	Potassium	NL	mg/L	**1**		**5.1**		**5.4**		**0.57**		**0.41**	J	**0.63**	
Metals	Sodium	20	mg/L	**15.5**		**8.3**		**18.2**		**4.3**		**3.6**		**2.2**	
Metals	Vanadium	NL	mg/L	0.005	U	**0.0063**		**0.029**		0.005	U	0.005	U	0.005	U
Metals	Zinc	2	mg/L	**0.0053**	J	**0.016**		**0.091**		**0.0018**	J	**0.0041**	J	**0.0026**	J

Notes

NL = Not Listed

Qualifiers:

U = not detected at the reporting limit

J = estimated concentration

QC Codes:

FS = normal field sample

FD = field duplicate sample

1.7 shaded and bold result indicates exceedance of standard

4.7 bold indicates compound detected

mg/L = milligram per liter

µg/L = microgram per liter

Table 3.6: Detected Contaminants in Surface Water, March 2016

			Location	SW-1	
			Sample Date	3/2/2016	
			Sample ID	SW-1	
			Qc Code	FS	
Class	**Parameter**	**Class C SW**	**Units**	Result	Qualifier
VOCs	Target Compounds	NA	µg/L	ND	
PCBs	Target Compounds	NA	µg/L	ND	
Metals	Barium	NL	mg/L	0.043	
Metals	Calcium	NL	mg/L	75.2	
Metals	Copper	0.018	mg/L	0.0029	J
Metals	Iron	0.3	mg/L	0.11	
Metals	Magnesium	NL	mg/L	11.7	
Metals	Manganese	NL	mg/L	0.032	
Metals	Potassium	NL	mg/L	3	
Metals	Sodium	NL	mg/L	4.5	
Hardness	Hardness as CaCO3	NL	mg/L	236	

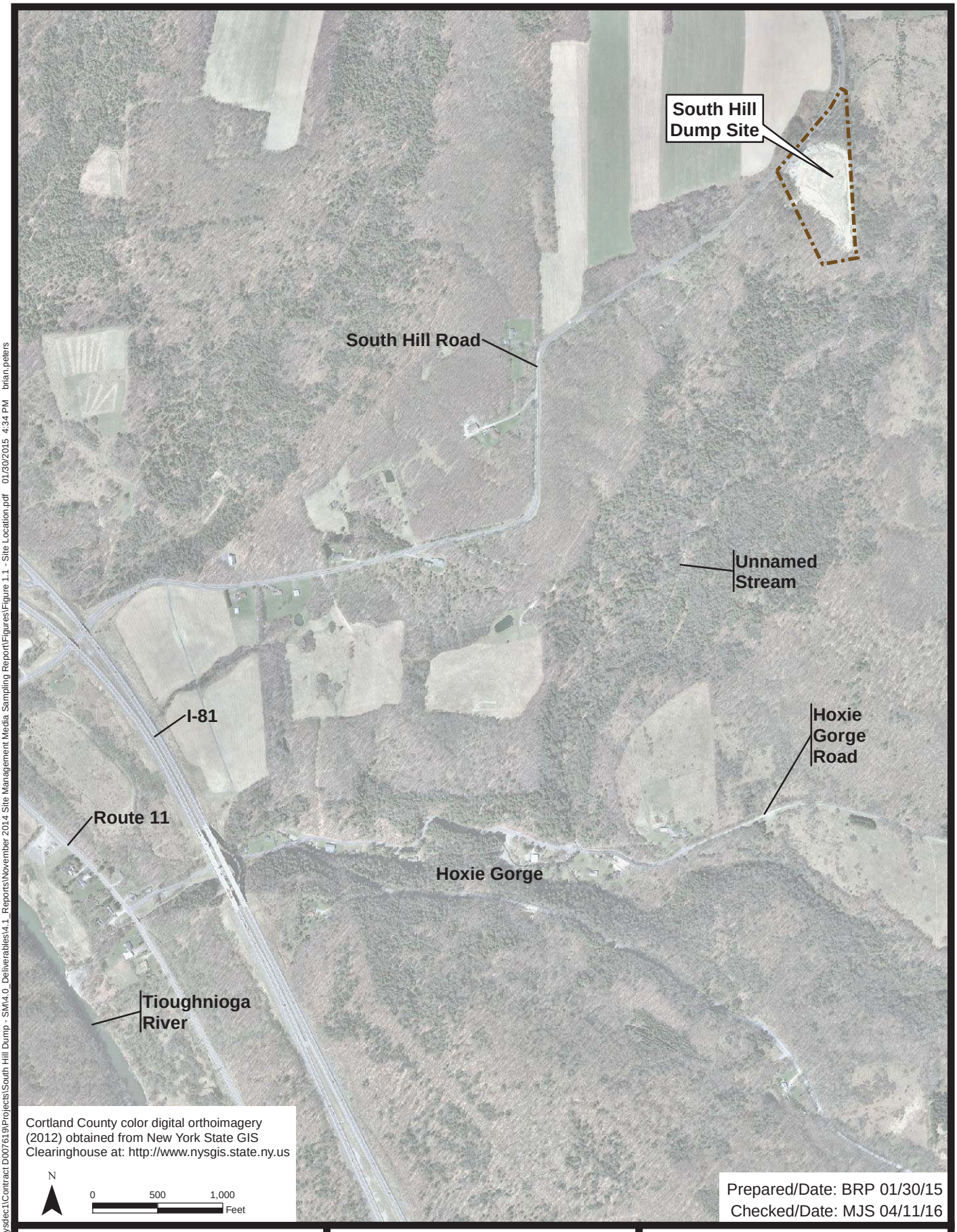
Notes
NL = Not Listed
NA = Not Applicable
ND = Not Detected
Qualifiers:
J = estimated concentration
QC Codes:
FS = normal field sample
mg/L = milligram per liter
µg/L = microgram per liter

Table 3.7: Detected Contaminants in Sediment, March 2016

Class	Parameter	NYSDEC Sediment Criteria	Location / Sample Date / Sample ID / Qc Code / Units	SED-1 3/2/2016 SED-1 FS Result	Qualifier
VOCs	Target Compounds	NA	ug/kg	ND	
PCBs	Target Compounds	NA	mg/kg	ND	
Metals	Aluminum	NL	mg/kg	16,800	
Metals	Arsenic	33	mg/kg	3.9	
Metals	Barium	NL	mg/kg	112	
Metals	Beryllium	NL	mg/kg	0.58	
Metals	Cadmium	9	mg/kg	0.21	J
Metals	Calcium	NL	mg/kg	1,630	
Metals	Chromium	110	mg/kg	18.5	
Metals	Cobalt	NL	mg/kg	6.8	
Metals	Copper	110	mg/kg	7.4	
Metals	Iron	40000	mg/kg	18,500	
Metals	Lead	110	mg/kg	5.9	
Metals	Magnesium	NL	mg/kg	3,300	
Metals	Manganese	1100	mg/kg	580	
Metals	Nickel	50	mg/kg	20.5	
Metals	Potassium	NL	mg/kg	1,680	
Metals	Sodium	NL	mg/kg	132	J
Metals	Vanadium	NL	mg/kg	23.7	
Metals	Zinc	270	mg/kg	62.8	
Solids	Percent Moisture	NL	Percent	28.4	
Solids	Percent Solids	NL	Percent	71.6	

Notes
NL = Not Listed
NA = Not Applicable
ND = Not Detected
Qualifiers:
J = estimated concentration
QC Codes:
FS = normal field sample
mg/kg = milligram per kilogram
ug/kg = microgram per kilogram

FIGURES



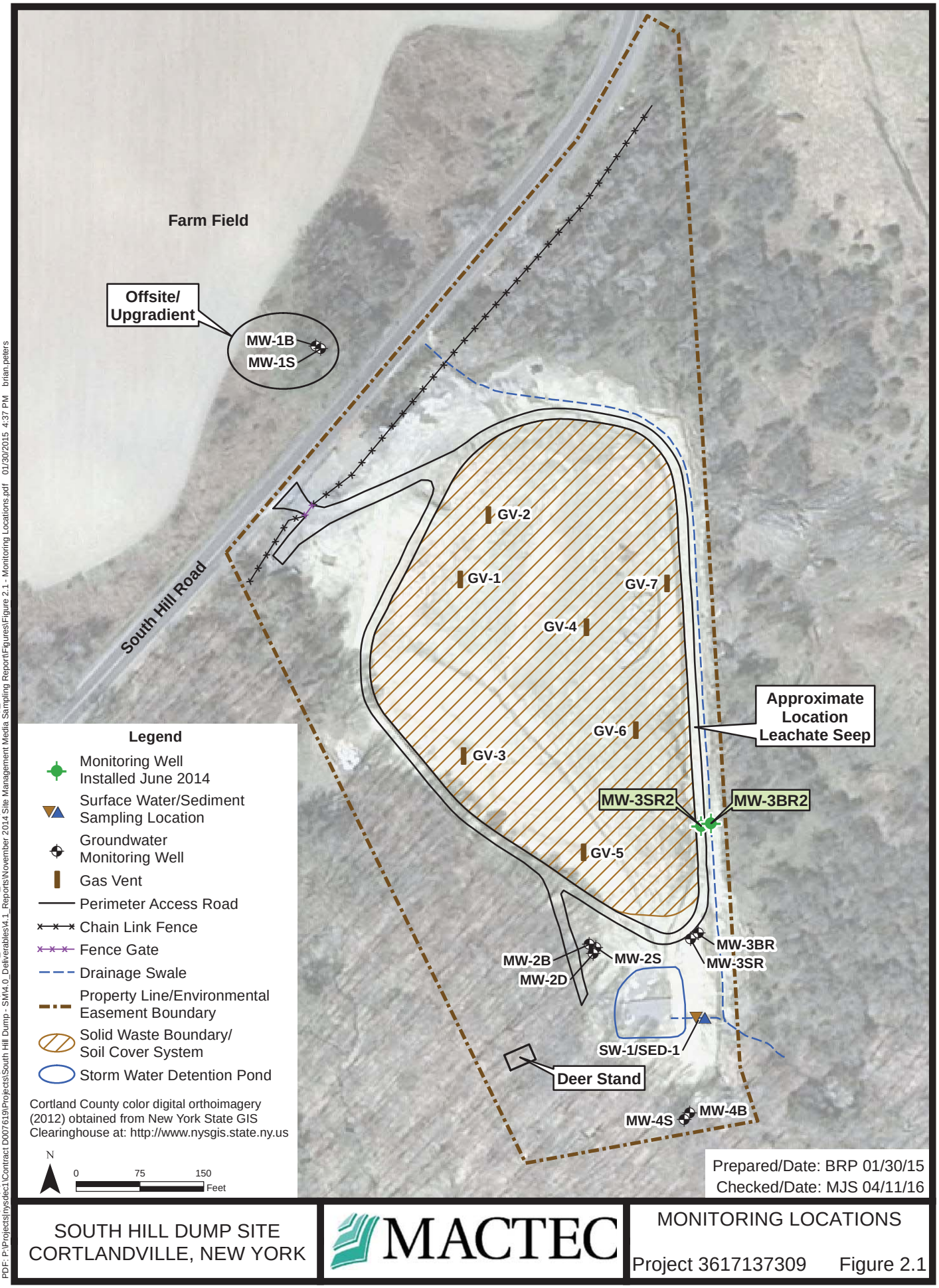
Prepared/Date: BRP 01/30/15
Checked/Date: MJS 04/11/16

SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

MACTEC

SITE LOCATION

Project 3617137309 Figure 1.1



SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

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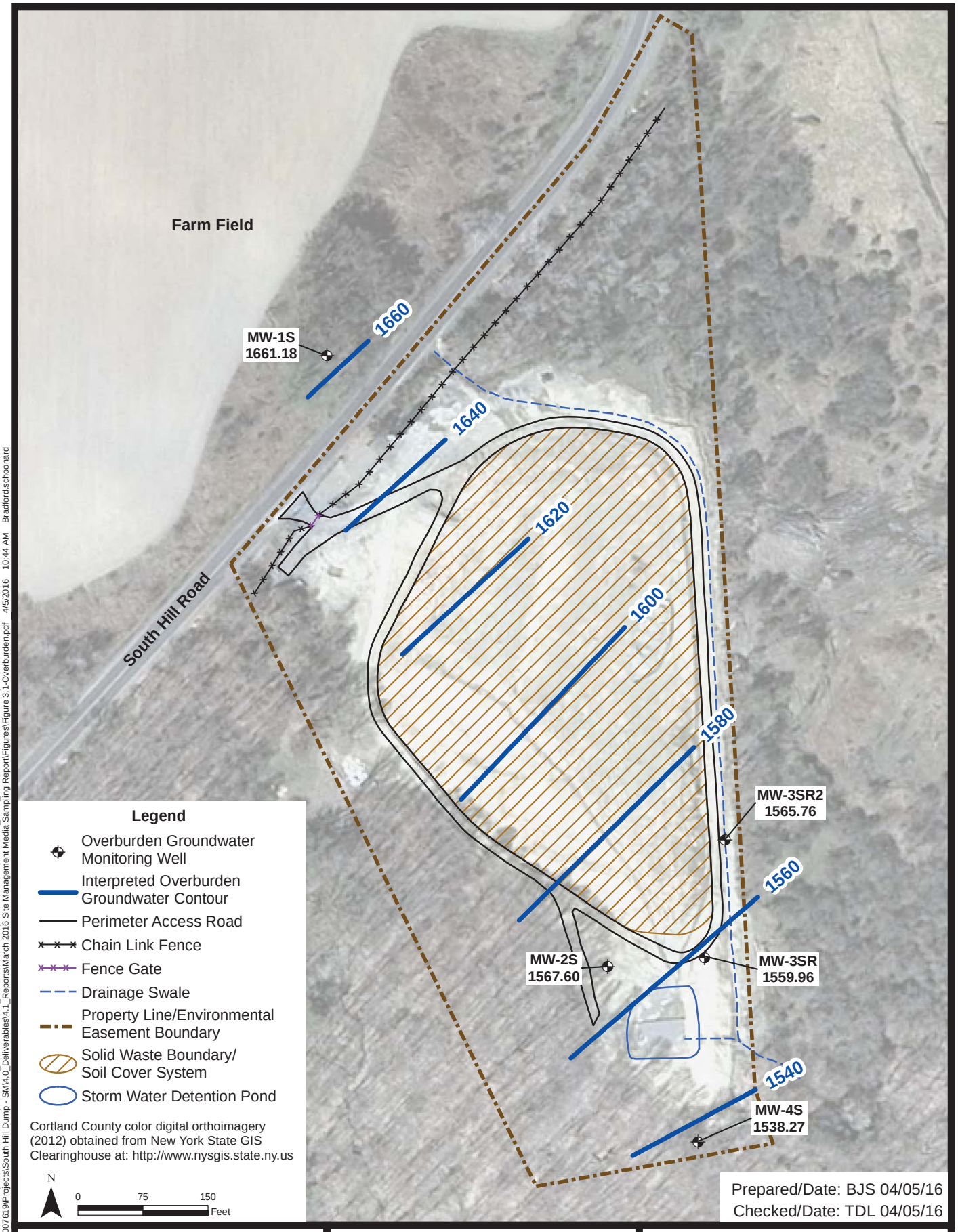
MONITORING LOCATIONS

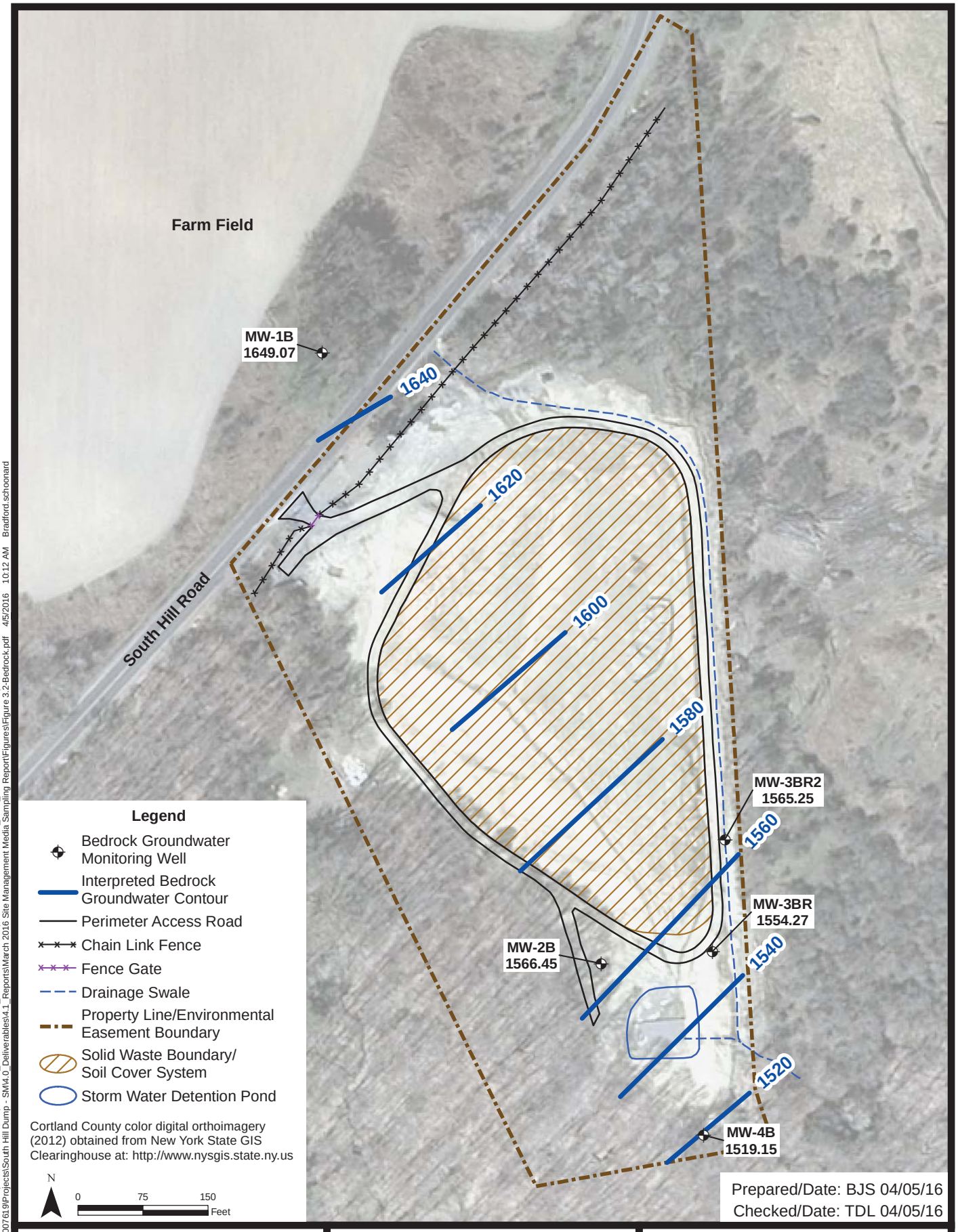
Project 3617137309 Figure 2.1



SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

MACTEC

2016 OVERBURDEN POTENTIOMETRIC SURFACE
Project 3617137309 Figure 3.1



SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

MACTEC

2016 BEDROCK POTENTIOMETRIC SURFACE
Project 3617137309 Figure 3.2

Document: P:\Projects
ysdec1\Contract D007619\Projects\South Hill Dump - SMI\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\Groundwater_2014_8.5x11P.mxd PDF: P:\Projects
ysdec1\Contract D007619\Projects\South Hill Dump - SMI\4.0_Deliverables\4.1_Reports\March 2016 Site Management Media Sampling Report\Figures\Figure 3.2-Bedrock.pdf 4/5/2016 10:12 AM Bradford.schoonard

Farm Field

South Hill Road

MW-1B

Date	7/18/2013		12/1/2014		3/2/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	1	U	1	U	1	U
Iron	0.05	U	0.056	J	**1.7**	**J**
Manganese	0.003	U	0.007		0.023	J
Sodium	10.2	B	8.4		7.7	

MW-1S

Date	7/18/2013		12/1/2014		3/2/2016	
Cis-1,2-DCE	1/1	U	1	U	1	U
TCE	1/1	U	1	U	1	U
Iron	0.05/0.051	U	0.17	J	**3.8**	**J**
Manganese	0.003/0.003	U	0.0041		0.061	J
Sodium	10.1/9.5	B	8.2		6.8	

MW-3SR2

Date	12/2/2014		3/2/2016	
Cis-1,2-DCE	**22**		**21**	
TCE	**200**		**200**	
Iron	0.1	J	**27.9**	J
Manganese	0.15		**0.72**	J
Sodium	15		18.2	

MW-3BR2

Date	12/2/2014		3/1/2016	
Cis-1,2-DCE	**7.1**		**12**	
TCE	**86**		**110**	
Iron	**17.8**	J	**109**	J
Manganese	**0.41**		**0.66**	J
Sodium	12.8		15.5	

MW-3BR

Date	8/6/2013		12/2/2014		3/1/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	1	U	1	U	1	U
Iron	**8.3**	B	**8.8**	**J**	**529**	**J**
Manganese	0.24	B	0.17		**7**	J
Sodium	**25.1**		18.1		18.5	

MW-2B

Date	7/17/2013		12/2/2014		3/2/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	2.4		1	U	1	U
Iron	**4.1**		**28.4**	J	**17.4**	**J**
Manganese	0.089		**0.34**		**0.25**	J
Sodium	4.8	B	4.3		4.4	

MW-3SR

Date	7/17/2013		12/2/2014		3/1/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	**20**		3.6		3.1	
Iron	0.086	U	**0.39**	J	**5.8**	J
Manganese	0.23		0.16		0.29	J
Sodium	6.2	B	11.3		8.3	

MW-2S

Date	8/6/2013		12/2/2014		3/2/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	1	U	1	U	1	U
Iron	0.05	U	**14.3**	J	**7.3**	J
Manganese	0.0075	B	**0.3**		0.15	J
Sodium	15.4		11.5		14.1	

MW-4B

Date	8/5/2013		12/2/2014		3/1/2016	
Cis-1,2-DCE	2.4		0.83/1.5	J	0.85/1	
TCE	**14**		2.1/5.1	J	**5.6/6.5**	
Iron	**1.1**	B	**21.7/28.2**	J	**12.4/45.6**	J
Manganese	0.014		0.26/0.29		0.1/0.25	J
Sodium	4.3		3.7/3.6		4.3/3.6	

MW-2D

Date	8/6/2013		12/2/2014		3/2/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	1	U	1	U	1	U
Iron	**0.38**	B	**1.8**	J	**0.96**	J
Manganese	0.015		0.058		0.037	J
Sodium	4.2		4.4		4.3	

MW-4S

Date	8/6/2013		12/2/2014		3/1/2016	
Cis-1,2-DCE	1	U	1	U	1	U
TCE	1	U	1	U	1	U
Iron	0.11	U	0.27	J	**0.62**	J
Manganese	0.0025	J	0.014		0.019	J
Sodium	1.9	U	2.1		2.2	

MW-1B
MW-1S
MW-3SR2
MW-3BR2
MW-3BR
MW-2B
MW-2S
MW-2D
MW-3SR
MW-4B
MW-4S

Notes:
Cis-1,2-DCE = Cis-1,2-Dichloroethene
TCE = Trichloroethene
Cis-1,2-DCE and TCE are in ug/L
Iron, Manganese, and Sodium are in mg/L
U = not detected at the reporting limit
J = estimated concentration
B = result was detected in associated method blank
Shaded and bold results indicate exceedance of standard

Legend

- Monitoring Well Installed June 2014
- Groundwater Monitoring Well
- Perimeter Access Road
- Chain Link Fence
- Fence Gate
- Drainage Swale
- Property Line/Environmental Easement Boundary
- Solid Waste Boundary/ Soil Cover System

N

0 75 150 Feet

Cortland County color digital orthoimagery (2012) obtained from New York State GIS Clearinghouse at: gis.ny.gov

Prepared/Date: BRP 04/14/16
Checked/Date: TDL 04/14/16

SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

MACTEC

SELECTED GROUNDWATER CONCENTRATIONS IN WELLS SINCE DECEMBER 2012
Project 3617137309 Figure 3.3

APPENDIX A

FIELD DATA RECORDS

Field Data Record - HydraSleeve Sampling
South Hill Dump
Field Activity Plan - March 2016

Sampler Name: Alex Bretl / Dan Nierenberg
Date HydraSleeves Deployed: 12/1/14 - 12/2/14
Date HydraSleeves Retrieved: 3/1/16 - 3/2/16

CHECKED BY: BPW 3/17/16

Sample Location	Sample I.D.	Sample Time	Water Level (Ft BTOR)	Turbidity (ntu)	Sample collected			Comments/Observations	
					VOC (8260B)	Metals (6010B)	Other		
MW-1S	MW-1S	1019 ~~AM~~	9.77	over range	✓	✓		whitish with strong turbidity	3/2
MW-1B	MW-1B	1037	22.28	123	✓	✓		PVC loose	3/2
MW-2S	MW-2S	0815	7.85	123	✓	✓		whitish turbidity (mod)	3/2
MW-2B	MW-2B	0833	8.40	over range	✓	✓		turbidity orange, a lot on bottom	3/2
MW-2D	MW-2D	0754	7.89	53.2	✓	✓		slight turbidity, relatively clear	3/2
MW-3SR	MW-3SR	1318	3.88	121	✓	✓		Called MW-3S on COC	3/1
MW-3BR	MW-3BR	1258	8.34	over range	✓	✓		Called MW-3B on COC, water black	3/1
MW-3SR2	MW-3SR2	0951	0.00	64.1	✓	✓		whitish turbidity mod	3/2
MW-3BR2	MW-3BR2	1345	0.00	over range	✓	✓		very turbid	3/1
MW-4S	MW-4S	1103	7.13	14.4	✓	✓			3/1
MW-4B	MW-4B	1211	26.30	over range	✓	✓	DUP MS/MSD	DUP, MS/MSD very turbid	3/1

Notes:
Ft BTOR - feet below top of riser
ntu - nephlometric turbidity unit

Prepared by: BPW1/21/2016
Checked by: HA 1/22/2016

SURFACE WATER AND SEDIMENT SAMPLING RECORD

MACTEC
511 Congress Street, Portland Maine 04101

PROJECT NAME	NYSDEC South Hill Dump
PROJECT NUMBER	617737309
SAMPLE ID	SW-1 / SED-1
SAMPLE TIME	0910/0911
SAMPLE LOCATION	
DATE	3/2/16
START TIME	0900
END TIME	0935
SITE NAME/NUMBER	712009
PAGE	1 OF 1

SURFACE WATER DATA

WATER DEPTH AT SAMPLE LOCATION: Culvert/drain pipe FT.
DEPTH OF SAMPLE BELOW WATER SURFACE: surface FT.
FLOW RATE: Est 5000 ML/MIN

WATER QUALITY PARAMETERS:

TEMPERATURE	—	°C
SPEC. COND.	—	mS/cm
PH	—	pH Units
ORP	—	mV
TURBIDITY	3.69	NTUs
DO	—	mg/L

☐ WINKLER METHOD
☐ DO PROBE

EQUIPMENT USED:
☐ BEAKER
☐ BOTTLE
☐ PACS BOMB
☐ PUMP
☐ FILTER
No. Type:
☐ FIELD DUPLICATE COLLECTED
DUP. ID

TYPE OF SURFACE WATER:
☒ STREAM
☐ RIVER
☐ LAKE
☐ POND
☐ SEEP
☐

FIELD SKETCH SHOWN/ATTACHED
☐ YES ☐ NO

DECON FLUIDS USED
☐ ALL USED
☐ LIQUINOX/DI H_2O SOLUTION
☐ DEIONIZED WATER
☐ POTABLE WATER
☐ NITRIC ACID
☐ HEXANE
☐ 25% METHANOL/75% ASTM TYPE II H_2O
☐ ETHYL ALCOHOL
☐

SAMPLING EQUIPMENT
WATER QUALITY METER MODEL NO. UNIT ID NO.
TURBIDITY METER MODEL NO. HACH 2100Q UNIT ID NO. M024-35

SEDIMENT AMPLE INFORMATION

TYPE OF SAMPLE
☑ DISCRETE
☐ COMPOSITE

SAMPLE INTERVAL:
TOP
BOTTOM

COLLECTION EQUIPMENT
☐ HAND AUGER/CORER
☐ S.S. SPLIT BARREL
☐ ALUMINUM PAN
☐ S.S. SHOVEL
☐ HAND SPOON/SPATULA
☐ S.S. BUCKET
☐ OTHER

DECON FLUIDS USED
☐ ALL USED
☐ LIQUINOX/DI H_2O SOLUTION
☐ DEIONIZED WATER
☐ POTABLE WATER
☐ NITRIC ACID
☐ HEXANE
☐ 25% METHANOL/75% ASTM TYPE II H_2O
☐ ETHYL ALCOHOL

QC SAMPLES
☐ DUPLICATE
☐ EQ BLK

TYPE OF MATERIAL:
☐ ORGANIC
☒ SAND
☐ GRAVEL
☐ CLAY
☐ FILL
☑ OTHER Silt

MS/MSD:
☐ YES
☑ NO

SAMPLE OBSERVATIONS
ODOR
COLOR
OTHER
PID

FIELD SKETCH SHOWN/ATTACHED
☐ YES
☐ NO

ANALYTICAL PARAMETERS

		PARAMETER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
Sediment	☑	VOCs	8260C	DI/MEOH	3-40mL, 1-250mL	Y	N	—
	☑	Metals	6010C	NONE	4oz	Y	N	—
	☑	PCBs	8082A	NONE	4oz	Y	N	—
Surface water	☑	VOCs	8260C	HCl	3 x 40mL	Y	N	—
	☑	Metals	6010C	HNO_3	1 x 250mL	Y	N	—
	☑	PCBs	8082A	NONE	2 - 250mL	Y	N	—
	☑	Hardness	SM2340B	HNO_3	1 - 250mL	Y	N	—
	☐							
	☐							

NOTES/SKETCH
SW- Collected right at culvert. SED-1 Collected downstream where there was available sediment edge of riprap.

Sampler Signature: Print Name: Alex Brett
Checked By: BRW Date: 3/18/16

FIGURE 4.14
SURFACE WATER AND SEDIMENT SAMPLING RECORD
NYSDEC QUALITY ASSURANCE PROJECT PLAN

moved when tried to remove gripper cap

Table 3: Well Inspection Checklist Field Data Record
South Hill Dump
Filed Activity Plan - March 2016

Inspected by: Alex Bretl / DAN Nierenberg

Date: 3/1/2016 CHECKED BY: BPW 3/17/16

Well ID	Measuring Point Elevation	Protective Casing Stickup (ft. AGS)	Protective Casing Stickup/Well Difference (ft.)	Depth to Water (ft. TOR)	Depth to BOW (ft. TOR)	Well ID Clearly Labeled (Y/N)	Well Lock/Cap (G/F/P)	Protective Casing (G/F/P)	Water in Annular Space (Y/N)	Concrete Pad (G/F/P)	Well Riser/Cap (G/F/P)	Well Obstruction (Y/N)	Comments
MW-1S	TOR	2.70	+0.11	9.77	17.9	Y	G	G	N	NA	F/P	N	Riser lifted when removal of cap Filter paper in hydrosleeve?
MW-1B	TOR	3.08	-0.24	22.28	37.9	Y	G	G	N	NA	G	N	
MW-2S	TOR	2.76	+0.08	7.85	12.9	Y	G	G	N	NA	G	N	
MW-2D	TOR	2.70	+0.13	8.40	27.0	Y	G	G	N	NA	G	N	
MW-2B	TOC	2.69	N/A	7.89	44.0	Y	G	G	UNK	NA	G	N	Casing cover (no cap) Good condition
MW-3SR	TOR	2.50	-0.63	3.08	25.3	Y	G	G	N	NA	G/F	N	Small crack
MW-3BR	TOC	2.76	N/A	8.34	43.9	Y	G	G	UNK	NA	G	N	Casing cover (no cap) Good condition
MW-3SR2	TOR	Flush	-0.21	0.00	11.04	Y	G	G	N	G	G	N	
MW-3BR2	TOR	Flush	-0.40	0.00	24.49	Y	G	G	N	G	G	N	
MW-4S	TOR	2.86	0.08	7.13	18.8	Y	G	G	N	NA	G	N	
MW-4B	TOC	3.30	N/A	26.30	48.4	Y	G	G	UNK	NA	G	N	Casing cover (no cap) Good condition

Notes:
G = Good
F = Fair
P = Poor
N = No
Y = Yes
N/A = Not Applicable
ft. = feet
in. = inches
BOW = bottom of well
AGS = Above ground surface
TOR = Top of Riser
TOC = Top of Casing

Prepared by: BPW 1/21/2016
Checked by:HA 1/22/2016

APPENDIX B

LABORATORY DATA CATEGORY A CHEMISTRY REVIEW

CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

1.0 INTRODUCTION

Groundwater, surface water, and sediment samples were collected in March 2016 at the South Hill Dump Site in Cortlandville, New York, and shipped to Test America Laboratories (TAL) located in Amherst, New York, for analysis. Samples were analyzed by one or more of the following methods:

- Volatile Organic Compounds (VOCs) by Method 8260C
- Polychlorinated Biphenyls (PCBs) by Method 8082A
- Metals (TAL ICP) by Method 6010C
- Hardness by Method SM 2340B

Results were reported in the following sample delivery group (SDG):

- 480-95925-1

Sample event information included in this chemistry review is presented in the following Tables:

- Table 1 – Summary of Samples and Analytical Methods
- Table 2 – Summary of Analytical Results
- Table 3 – Summary of Qualification Actions

Laboratory deliverables included:

- Category A deliverable as defined in the New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocols (NYSDEC, 2005)

The Category A review included the following evaluations. Data review checklists are provided as Attachment A.

- Lab Report Narrative Review
- Data Package Completeness and COC records (Table 1 verification)
- Sample Preservation and Holding Times
- QC Blanks
- Field Duplicate Evaluation
- Matrix spike and Matrix Spike Duplicate (MS/MSD) Evaluation
- Reporting Limits
- Electronic Data Qualification and Verification

The following laboratory data qualifiers or data review qualifiers are used in the final data presentation:

U = target analyte is not detected at or above the reporting limit
J = concentration is estimated

UJ = target analyte is not detected and reporting limit is estimated

2.0 POTENTIAL DATA LIMITATIONS

Based on this Category A Review the data meet the data quality objectives; however, the following potential limitations were identified:

- Methylene chloride (0.92 J µg/L) was reported in the method blank associated with a subset of samples. Methylene chloride (0.64 µg/L) was also reported in the Trip Blank associated with all samples. Action levels were calculated at ten times the blank concentrations and compared to associated sample results. Low level detections of methylene chloride that were below the action level were qualified non-detect (U) in affected samples, and qualified results are summarized in Table 3 with reason code BL1 and BL2.

- Percent recoveries for iron (131, 251), calcium (157), and manganese (144) were above the 75-125 control limits in the MS and/or MSD associated with sample MW-4B. In addition, the relative percent difference (RPD) between recoveries of iron (38) was above the control limit of 20. Positive detections of iron, calcium, and manganese in all groundwater (MW) samples were qualified estimated (J) and may represent potential high biases. Qualified results are summarized in Table 3 with reason codes MS-H and/or MS-RPD.

- Field duplicate results for sample MW-4B and MW-4B DUP were inconsistent for the following analytes: barium, calcium, chromium, iron, and manganese. RPDs between results for barium (78), calcium (53), iron (114), and manganese (86) were above the control limit of 20. Chromium was not detected in sample MW-4B, but was detected above the RL in the associated field duplicate. Results for these analytes were qualified estimated (J/UJ) in all groundwater samples. Qualified results are summarized in Table 3 with reason code FD.

- Sample MW-3SR2 was analyzed at a four-fold (4X) dilution due to a high concentration of trichloroethene. Target compounds have elevated reporting limits as indicated in Table 2.

3.0 ADDITIONAL QC EXCEEDANCES AND OBSERVATIONS

Additional observations and quality control exceedances not specifically addressed above (Section 2.0) or included in Table 3 are summarized below. Unless presented in Table 3, sample results are interpreted to be usable as reported by the laboratory.

3.1 VOCs

Instrument Calibration

The laboratory narrative noted the continuing calibration percent differences (%Ds) for the following target analytes were outside control limit of 20:

- Methylene chloride
- Trichlorofluoromethane
- Chloromethane

- Carbon disulfide
- Chlorobromomethane
- 1,2,4-Trichlorobenzene
- 1,2,3-Trichlorobenzene

No laboratory qualifiers associated with calibration were reported with sample data and sample results were reported unqualified. The affected analytes are not primary site contaminants and were not detected in the samples. The calibration outliers are not interpreted to be significant data limitations.

Laboratory Control Samples

The laboratory narrative noted the LCS and/or LCSD percent recoveries for the following target analytes were outside laboratory control limits:

- 2-Butanone
- Acetone
- Dichlorobromomethane
- Chlorobromomethane
- 1,1-Dichloroethene
- Dichlorodifluoromethane

The laboratory narrative stated high biases were indicated for all analytes except dichlorodifluoromethane and all associated sample results were non-detect. Therefore, sample results for 2-butanone, acetone, dichlorobromomethane, chlorobromomethane, and 1,1-dichloroethene were reported unqualified. A low bias was indicated for dichlorodifluoromethane and results in associated samples MW-1S and MW-1B were non-detect. Reporting limits for dichlorodifluoromethane in MW-1S and MW-1B were qualified estimated (UJ) and results are summarized in Table 3 with reason code LCS-L. The affected analytes are not primary site contaminants and the calibration outliers are not interpreted to be significant data limitations.

3.2 PCBs

There were no additional observations or quality control exceedances for the PCBs analyses.

3.3 Metals and Hardness

There were no additional observations or quality control exceedances for the metals and hardness analyses.

Reference:

New York State Department of Environmental Conservation (NYSDEC), 2005. "Analytical Services Protocols"; July 2005.

Data Validator: Julie Ricardi

Julie Ricardi

Date: 3/30/2016

Reviewed by: Christian Ricardi, NRCC-EAC

Chris Ricardi

Date: 4/4/2016

TABLE 1
SUMMARY OF SAMPLES AND ANALYTICAL METHODS
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

					Method Class	VOCs	PCBs	Metals	Hardness	Solids
					Analysis Method	SW8260C	SW8082A	SW6010C	SM2340B	D2216
					Fraction	N	N	T	T	N
SDG	Location	Sample ID	Sample Date	Media	Qc Code	Param_Count	Param_Count	Param_Count	Param_Count	Param_Count
480-95925-1	MW-1B	MW-1B	3/2/2016	GW	FS	51		22		
480-95925-1	MW-1S	MW-1S	3/2/2016	GW	FS	51		22		
480-95925-1	MW-2B	MW-2B	3/2/2016	GW	FS	51		22		
480-95925-1	MW-2D	MW-2D	3/2/2016	GW	FS	51		22		
480-95925-1	MW-2S	MW-2S	3/2/2016	GW	FS	51		22		
480-95925-1	MW-3BR	MW-3B	3/1/2016	GW	FS	51		22		
480-95925-1	MW-3BR2	MW-3BR2	3/1/2016	GW	FS	51		22		
480-95925-1	MW-3SR	MW-3S	3/1/2016	GW	FS	51		22		
480-95925-1	MW-3SR2	MW-3SR2	3/2/2016	GW	FS	51		22		
480-95925-1	MW-4B	MW-4B	3/1/2016	GW	FS	51		22		
480-95925-1	MW-4B	MW-4B DUP	3/1/2016	GW	FD	51		22		
480-95925-1	MW-4S	MW-4S	3/1/2016	GW	FS	51		22		
480-95925-1	QC	TRIP BLANK	3/2/2016	BW	TB	51				
480-95925-1	SED-1	SED-1	3/2/2016	SED	FS	51	7	22		2
480-95925-1	SW-1	SW-1	3/2/2016	SW	FS	51	7	22	1	

GW = groundwater, BW = blank water, SED = sediment
N, T = total
FS = field sample, FD = field duplicate, TB = trip blank
Param_Count = number of target analytes reported

TABLE 2
SUMMARY ANALYTICAL RESULTS - SEDIMENT SAMPLE
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	SED-1	
		Sample Date	3/2/2016	
		Sample ID	SED-1	
		Qc Code	FS	
Class	Parameter	Units	Result	Qualifier
VOCs	1,1,1-Trichloroethane	ug/kg	5.6	U
VOCs	1,1,2,2-Tetrachloroethane	ug/kg	5.6	U
VOCs	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/kg	5.6	U
VOCs	1,1,2-Trichloroethane	ug/kg	5.6	U
VOCs	1,1-Dichloroethane	ug/kg	5.6	U
VOCs	1,1-Dichloroethene	ug/kg	5.6	U
VOCs	1,2,3-Trichlorobenzene	ug/kg	5.6	U
VOCs	1,2,4-Trichlorobenzene	ug/kg	5.6	U
VOCs	1,2-Dibromo-3-chloropropane	ug/kg	5.6	U
VOCs	1,2-Dibromoethane	ug/kg	5.6	U
VOCs	1,2-Dichlorobenzene	ug/kg	5.6	U
VOCs	1,2-Dichloroethane	ug/kg	5.6	U
VOCs	1,2-Dichloropropane	ug/kg	5.6	U
VOCs	1,3-Dichlorobenzene	ug/kg	5.6	U
VOCs	1,4-Dichlorobenzene	ug/kg	5.6	U
VOCs	1,4-Dioxane	ug/kg	110	U
VOCs	2-Butanone	ug/kg	28	U
VOCs	2-Hexanone	ug/kg	28	U
VOCs	4-Methyl-2-pentanone	ug/kg	28	U
VOCs	Acetic acid, methyl ester	ug/kg	5.6	U
VOCs	Acetone	ug/kg	28	U
VOCs	Benzene	ug/kg	5.6	U
VOCs	Bromochloromethane	ug/kg	5.6	U
VOCs	Bromodichloromethane	ug/kg	5.6	U
VOCs	Bromoform	ug/kg	5.6	U
VOCs	Bromomethane	ug/kg	5.6	U
VOCs	Carbon disulfide	ug/kg	5.6	U
VOCs	Carbon tetrachloride	ug/kg	5.6	U
VOCs	Chlorobenzene	ug/kg	5.6	U
VOCs	Chloroethane	ug/kg	5.6	U
VOCs	Chloroform	ug/kg	5.6	U
VOCs	Chloromethane	ug/kg	5.6	U
VOCs	Cis-1,2-Dichloroethene	ug/kg	5.6	U
VOCs	Cis-1,3-Dichloropropene	ug/kg	5.6	U
VOCs	Cyclohexane	ug/kg	5.6	U
VOCs	Dibromochloromethane	ug/kg	5.6	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - SEDIMENT SAMPLE
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	SED-1	
		Sample Date	3/2/2016	
		Sample ID	SED-1	
		Qc Code	FS	
Class	Parameter	Units	Result	Qualifier
VOCs	Dichlorodifluoromethane	ug/kg	5.6	U
VOCs	Ethylbenzene	ug/kg	5.6	U
VOCs	Isopropylbenzene	ug/kg	5.6	U
VOCs	Methyl cyclohexane	ug/kg	5.6	U
VOCs	Methyl Tertbutyl Ether	ug/kg	5.6	U
VOCs	Methylene chloride	ug/kg	5.6	U
VOCs	Styrene	ug/kg	5.6	U
VOCs	Tetrachloroethene	ug/kg	5.6	U
VOCs	Toluene	ug/kg	5.6	U
VOCs	trans-1,2-Dichloroethene	ug/kg	5.6	U
VOCs	trans-1,3-Dichloropropene	ug/kg	5.6	U
VOCs	Trichloroethene	ug/kg	5.6	U
VOCs	Trichlorofluoromethane	ug/kg	5.6	U
VOCs	Vinyl chloride	ug/kg	5.6	U
VOCs	Xylenes, Total	ug/kg	11	U
PCBs	Aroclor-1016	mg/kg	0.31	U
PCBs	Aroclor-1221	mg/kg	0.31	U
PCBs	Aroclor-1232	mg/kg	0.31	U
PCBs	Aroclor-1242	mg/kg	0.31	U
PCBs	Aroclor-1248	mg/kg	0.31	U
PCBs	Aroclor-1254	mg/kg	0.31	U
PCBs	Aroclor-1260	mg/kg	0.31	U
Metals	Aluminum	mg/kg	16,800	
Metals	Antimony	mg/kg	20.9	U
Metals	Arsenic	mg/kg	4	
Metals	Barium	mg/kg	112	
Metals	Beryllium	mg/kg	0.58	
Metals	Cadmium	mg/kg	0.21	J
Metals	Calcium	mg/kg	1,630	
Metals	Chromium	mg/kg	18.5	
Metals	Cobalt	mg/kg	7	
Metals	Copper	mg/kg	7.4	
Metals	Iron	mg/kg	18,500	
Metals	Lead	mg/kg	5.9	
Metals	Magnesium	mg/kg	3,300	
Metals	Manganese	mg/kg	580	

TABLE 2
SUMMARY ANALYTICAL RESULTS - SEDIMENT SAMPLE
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	SED-1	
		Sample Date	3/2/2016	
		Sample ID	SED-1	
		Qc Code	FS	
Class	Parameter	Units	Result	Qualifier
Metals	Nickel	mg/kg	21	
Metals	Potassium	mg/kg	1,680	
Metals	Selenium	mg/kg	5.6	U
Metals	Silver	mg/kg	1	U
Metals	Sodium	mg/kg	132	J
Metals	Thallium	mg/kg	8.4	U
Metals	Vanadium	mg/kg	23.7	
Metals	Zinc	mg/kg	62.8	
Solids	Percent Moisture	Percent	28.4	
Solids	Percent Solids	Percent	71.6	

U = analyte not detected
J = estimated concentration
mg/kg = milligram per kilogram
ug/kg = microgram per kilogram

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-1B		MW-1S		MW-2B		MW-2D	
		Sample Date	3/2/2016		3/2/2016		3/2/2016		3/2/2016	
		Sample ID	MW-1B		MW-1S		MW-2B		MW-2D	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dibromo-3-chloropropane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,4-Dioxane	ug/l	40	U	40	U	40	U	40	U
VOCs	2-Butanone	ug/l	10	U	10	U	10	U	10	U
VOCs	2-Hexanone	ug/l	5	U	5	U	5	U	5	U
VOCs	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5	U
VOCs	Acetic acid, methyl ester	ug/l	2.5	U	2.5	U	2.5	U	2.5	U
VOCs	Acetone	ug/l	10	U	10	U	10	U	10	U
VOCs	Benzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Bromodichloromethane	ug/l	1	U	1	U	1	U	1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-1B		MW-1S		MW-2B		MW-2D	
		Sample Date	3/2/2016		3/2/2016		3/2/2016		3/2/2016	
		Sample ID	MW-1B		MW-1S		MW-2B		MW-2D	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Bromoform	ug/l	1	U	1	U	1	U	1	U
VOCs	Bromomethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Carbon disulfide	ug/l	1	U	1	U	1	U	1	U
VOCs	Carbon tetrachloride	ug/l	1	U	1	U	1	U	1	U
VOCs	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Chloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Chloroform	ug/l	1	U	1	U	1	U	1	U
VOCs	Chloromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	Cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
VOCs	Cyclohexane	ug/l	1	U	1	U	1	U	1	U
VOCs	Dibromochloromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Dichlorodifluoromethane	ug/l	1	UJ	1	UJ	1	U	1	U
VOCs	Ethylbenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Methyl cyclohexane	ug/l	1	U	1	U	1	U	1	U
VOCs	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1	U
VOCs	Methylene chloride	ug/l	1	U	1	U	1	U	1	U
VOCs	Styrene	ug/l	1	U	1	U	1	U	1	U
VOCs	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	Toluene	ug/l	1	U	1	U	1	U	1	U
VOCs	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
VOCs	Trichloroethene	ug/l	1	U	1	U	1	U	1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-1B		MW-1S		MW-2B		MW-2D	
		Sample Date	3/2/2016		3/2/2016		3/2/2016		3/2/2016	
		Sample ID	MW-1B		MW-1S		MW-2B		MW-2D	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Vinyl chloride	ug/l	1	U	1	U	1	U	1	U
VOCs	Xylenes, Total	ug/l	2	U	2	U	2	U	2	U
PCBs	Aroclor-1016	ug/l								
PCBs	Aroclor-1221	ug/l								
PCBs	Aroclor-1232	ug/l								
PCBs	Aroclor-1242	ug/l								
PCBs	Aroclor-1248	ug/l								
PCBs	Aroclor-1254	ug/l								
PCBs	Aroclor-1260	ug/l								
Metals	Aluminum	mg/l	0.88		4.1		0.2	U	0.73	
Metals	Antimony	mg/l	0.02	U	0.02	U	0.02	U	0.02	U
Metals	Arsenic	mg/l	0.015	U	0.015	U	0.015	U	0.015	U
Metals	Barium	mg/l	0.03	J	0.046	J	0.092	J	0.035	J
Metals	Beryllium	mg/l	0.002	U	0.002	U	0.002	U	0.002	U
Metals	Cadmium	mg/l	0.002	U	0.002	U	0.002	U	0.002	U
Metals	Calcium	mg/l	20.8	J	18	J	30.7	J	55.4	J
Metals	Chromium	mg/l	0.0035	J	0.0044		0.0016	J	0.0029	J
Metals	Cobalt	mg/l	0.004	U	0.0013	J	0.004	U	0.004	U
Metals	Copper	mg/l	0.0025	J	0.0034	J	0.0051	J	0.01	U
Metals	Iron	mg/l	1.7	J	3.8	J	17.4	J	0.96	J
Metals	Lead	mg/l	0.01	U	0.01	U	0.01	U	0.01	U
Metals	Magnesium	mg/l	4.7		4.8		7.5		13.6	
Metals	Manganese	mg/l	0.023	J	0.061	J	0.25	J	0.037	J

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-1B		MW-1S		MW-2B		MW-2D	
		Sample Date	3/2/2016		3/2/2016		3/2/2016		3/2/2016	
		Sample ID	MW-1B		MW-1S		MW-2B		MW-2D	
		Qc Code	FS		FS		FS		FS	
Class	**Parameter**	**Units**	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Metals	Nickel	mg/l	0.0018	J	0.0034	J	0.0036	J	0.01	U
Metals	Potassium	mg/l	0.9		1.5		1		1.2	
Metals	Selenium	mg/l	0.025	U	0.025	U	0.025	U	0.025	U
Metals	Silver	mg/l	0.006	U	0.006	U	0.006	U	0.006	U
Metals	Sodium	mg/l	7.7		6.8		4.4		4.3	
Metals	Thallium	mg/l	0.02	U	0.02	U	0.02	U	0.02	U
Metals	Vanadium	mg/l	0.0024	J	0.0046	J	0.005	U	0.0015	J
Metals	Zinc	mg/l	0.02		0.013		0.0029	J	0.0037	J
Hardness	Hardness as CaCO3	mg/l								

U = analyte not detected
J = estimated concentration
ug/L = microgram per liter
mg/L = milligram per liter

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-2S		MW-3BR		MW-3BR2		MW-3SR	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-2S		MW-3B		MW-3BR2		MW-3S	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	1,1,1-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1,2-Trichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,1-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2,3-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2,4-Trichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dibromo-3-chloropropane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dibromoethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dichloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,2-Dichloropropane	ug/l	1	U	1	U	1	U	1	U
VOCs	1,3-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,4-Dichlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	1,4-Dioxane	ug/l	40	U	40	U	40	U	40	U
VOCs	2-Butanone	ug/l	10	U	10	U	10	U	10	U
VOCs	2-Hexanone	ug/l	5	U	5	U	5	U	5	U
VOCs	4-Methyl-2-pentanone	ug/l	5	U	5	U	5	U	5	U
VOCs	Acetic acid, methyl ester	ug/l	2.5	U	2.5	U	2.5	U	2.5	U
VOCs	Acetone	ug/l	10	U	10	U	10	U	10	U
VOCs	Benzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Bromochloromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Bromodichloromethane	ug/l	1	U	1	U	1	U	1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-2S		MW-3BR		MW-3BR2		MW-3SR	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-2S		MW-3B		MW-3BR2		MW-3S	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Bromoform	ug/l	1	U	1	U	1	U	1	U
VOCs	Bromomethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Carbon disulfide	ug/l	1	U	1	U	1	U	1	U
VOCs	Carbon tetrachloride	ug/l	1	U	1	U	1	U	1	U
VOCs	Chlorobenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Chloroethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Chloroform	ug/l	1	U	1	U	1	U	1	U
VOCs	Chloromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Cis-1,2-Dichloroethene	ug/l	1	U	1	U	12		1	U
VOCs	Cis-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
VOCs	Cyclohexane	ug/l	1	U	1	U	1	U	1	U
VOCs	Dibromochloromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Dichlorodifluoromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Ethylbenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Isopropylbenzene	ug/l	1	U	1	U	1	U	1	U
VOCs	Methyl cyclohexane	ug/l	1	U	1	U	1	U	1	U
VOCs	Methyl Tertbutyl Ether	ug/l	1	U	1	U	1	U	1	U
VOCs	Methylene chloride	ug/l	1	U	2.3	U	1	U	1.4	U
VOCs	Styrene	ug/l	1	U	1	U	1	U	1	U
VOCs	Tetrachloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	Toluene	ug/l	1	U	1	U	1	U	1	U
VOCs	trans-1,2-Dichloroethene	ug/l	1	U	1	U	1	U	1	U
VOCs	trans-1,3-Dichloropropene	ug/l	1	U	1	U	1	U	1	U
VOCs	Trichloroethene	ug/l	1	U	1	U	110		3.1	

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-2S		MW-3BR		MW-3BR2		MW-3SR	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-2S		MW-3B		MW-3BR2		MW-3S	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Trichlorofluoromethane	ug/l	1	U	1	U	1	U	1	U
VOCs	Vinyl chloride	ug/l	1	U	1	U	1	U	1	U
VOCs	Xylenes, Total	ug/l	2	U	2	U	2	U	2	U
PCBs	Aroclor-1016	ug/l								
PCBs	Aroclor-1221	ug/l								
PCBs	Aroclor-1232	ug/l								
PCBs	Aroclor-1242	ug/l								
PCBs	Aroclor-1248	ug/l								
PCBs	Aroclor-1254	ug/l								
PCBs	Aroclor-1260	ug/l								
Metals	Aluminum	mg/l	6.6		0.2	U	0.19	J	3.9	
Metals	Antimony	mg/l	0.02	U	0.02	U	0.02	U	0.02	U
Metals	Arsenic	mg/l	0.015	U	0.015	U	0.015	U	0.015	U
Metals	Barium	mg/l	0.065	J	0.13	J	0.25	J	0.098	J
Metals	Beryllium	mg/l	0.002	U	0.002	U	0.002	U	0.002	U
Metals	Cadmium	mg/l	0.002	U	0.002	U	0.002	U	0.002	U
Metals	Calcium	mg/l	74.2	J	9.4	J	81.4	J	67.1	J
Metals	Chromium	mg/l	0.013		0.004	U	0.001	J	0.0064	
Metals	Cobalt	mg/l	0.0023	J	0.004	U	0.004	U	0.0024	J
Metals	Copper	mg/l	0.0067	J	0.008	J	0.0026	J	0.0051	J
Metals	Iron	mg/l	7.3	J	529	J	109	J	5.8	J
Metals	Lead	mg/l	0.01	U	0.01	U	0.01	U	0.01	U
Metals	Magnesium	mg/l	15.1		3.5		16.1		14.6	
Metals	Manganese	mg/l	0.15	J	7	J	0.66	J	0.29	J

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-2S		MW-3BR		MW-3BR2		MW-3SR	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-2S		MW-3B		MW-3BR2		MW-3S	
		Qc Code	FS		FS		FS		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Metals	Nickel	mg/l	0.0072	J	0.062		0.0065	J	0.0056	J
Metals	Potassium	mg/l	2.1		3.3		1		5.1	
Metals	Selenium	mg/l	0.025	U	0.025	U	0.025	U	0.025	U
Metals	Silver	mg/l	0.006	U	0.006	U	0.006	U	0.006	U
Metals	Sodium	mg/l	14.1		18.5		15.5		8.3	
Metals	Thallium	mg/l	0.02	U	0.02	U	0.02	U	0.02	U
Metals	Vanadium	mg/l	0.009		0.005	U	0.005	U	0.0063	
Metals	Zinc	mg/l	0.042		0.0059	J	0.0053	J	0.016	
Hardness	Hardness as CaCO3	mg/l								

U = analyte not detected
J = estimated concentration
ug/L = microgram per liter
mg/L = milligram per liter

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-3SR2		MW-4B		MW-4B		MW-4S	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-3SR2		MW-4B		MW-4B DUP		MW-4S	
		Qc Code	FS		FS		FD		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	1,1,1-Trichloroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,1,2,2-Tetrachloroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,1,2-Trichloroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,1-Dichloroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,1-Dichloroethene	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2,3-Trichlorobenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2,4-Trichlorobenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2-Dibromo-3-chloropropane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2-Dibromoethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2-Dichlorobenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2-Dichloroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,2-Dichloropropane	ug/l	4	U	1	U	1	U	1	U
VOCs	1,3-Dichlorobenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	1,4-Dichlorobenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	1,4-Dioxane	ug/l	160	U	40	U	40	U	40	U
VOCs	2-Butanone	ug/l	40	U	10	U	10	U	10	U
VOCs	2-Hexanone	ug/l	20	U	5	U	5	U	5	U
VOCs	4-Methyl-2-pentanone	ug/l	20	U	5	U	5	U	5	U
VOCs	Acetic acid, methyl ester	ug/l	10	U	2.5	U	2.5	U	2.5	U
VOCs	Acetone	ug/l	40	U	10	U	10	U	10	U
VOCs	Benzene	ug/l	4	U	1	U	1	U	1	U
VOCs	Bromochloromethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Bromodichloromethane	ug/l	4	U	1	U	1	U	1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-3SR2		MW-4B		MW-4B		MW-4S	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-3SR2		MW-4B		MW-4B DUP		MW-4S	
		Qc Code	FS		FS		FD		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Bromoform	ug/l	4	U	1	U	1	U	1	U
VOCs	Bromomethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Carbon disulfide	ug/l	4	U	1	U	1	U	1	U
VOCs	Carbon tetrachloride	ug/l	4	U	1	U	1	U	1	U
VOCs	Chlorobenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	Chloroethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Chloroform	ug/l	4	U	1	U	1	U	1	U
VOCs	Chloromethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Cis-1,2-Dichloroethene	ug/l	21		0.85	J	1		1	U
VOCs	Cis-1,3-Dichloropropene	ug/l	4	U	1	U	1	U	1	U
VOCs	Cyclohexane	ug/l	4	U	1	U	1	U	1	U
VOCs	Dibromochloromethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Dichlorodifluoromethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Ethylbenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	Isopropylbenzene	ug/l	4	U	1	U	1	U	1	U
VOCs	Methyl cyclohexane	ug/l	4	U	1	U	1	U	1	U
VOCs	Methyl Tertbutyl Ether	ug/l	4	U	1	U	1	U	1	U
VOCs	Methylene chloride	ug/l	13	U	1	U	1	U	1	U
VOCs	Styrene	ug/l	4	U	1	U	1	U	1	U
VOCs	Tetrachloroethene	ug/l	4	U	1	U	1	U	1	U
VOCs	Toluene	ug/l	4	U	1	U	1	U	1	U
VOCs	trans-1,2-Dichloroethene	ug/l	4	U	1	U	1	U	1	U
VOCs	trans-1,3-Dichloropropene	ug/l	4	U	1	U	1	U	1	U
VOCs	Trichloroethene	ug/l	200		5.6		6.5		1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
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SOUTH HILL DUMP SITE
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		Location	MW-3SR2		MW-4B		MW-4B		MW-4S	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-3SR2		MW-4B		MW-4B DUP		MW-4S	
		Qc Code	FS		FS		FD		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
VOCs	Trichlorofluoromethane	ug/l	4	U	1	U	1	U	1	U
VOCs	Vinyl chloride	ug/l	4	U	1	U	1	U	1	U
VOCs	Xylenes, Total	ug/l	8	U	2	U	2	U	2	U
PCBs	Aroclor-1016	ug/l								
PCBs	Aroclor-1221	ug/l								
PCBs	Aroclor-1232	ug/l								
PCBs	Aroclor-1242	ug/l								
PCBs	Aroclor-1248	ug/l								
PCBs	Aroclor-1254	ug/l								
PCBs	Aroclor-1260	ug/l								
Metals	Aluminum	mg/l	18.2		0.2	U	0.2	U	0.3	
Metals	Antimony	mg/l	0.02	U	0.02	U	0.02	U	0.02	U
Metals	Arsenic	mg/l	0.0083	J	0.015	U	0.015	U	0.015	U
Metals	Barium	mg/l	0.32	J	0.036	J	0.082	J	0.036	J
Metals	Beryllium	mg/l	0.00067	J	0.002	U	0.002	U	0.002	U
Metals	Cadmium	mg/l	0.002	U	0.002	U	0.002	U	0.002	U
Metals	Calcium	mg/l	97.6	J	18.6	J	32	J	72.7	J
Metals	Chromium	mg/l	0.026		0.004	UJ	0.0041	J	0.0017	J
Metals	Cobalt	mg/l	0.011		0.004	U	0.004	U	0.004	U
Metals	Copper	mg/l	0.021		0.0017	J	0.0053	J	0.01	U
Metals	Iron	mg/l	27.9	J	12.4	J	45.6	J	0.62	J
Metals	Lead	mg/l	0.01	U	0.01	U	0.01	U	0.01	U
Metals	Magnesium	mg/l	23.2		6.7		7.6		11.9	
Metals	Manganese	mg/l	0.72	J	0.1	J	0.25	J	0.019	J

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	MW-3SR2		MW-4B		MW-4B		MW-4S	
		Sample Date	3/2/2016		3/1/2016		3/1/2016		3/1/2016	
		Sample ID	MW-3SR2		MW-4B		MW-4B DUP		MW-4S	
		Qc Code	FS		FS		FD		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier	Result	Qualifier	Result	Qualifier
Metals	Nickel	mg/l	0.027		0.01	U	0.0049	J	0.01	U
Metals	Potassium	mg/l	5.4		0.57		0.41	J	0.63	
Metals	Selenium	mg/l	0.025	U	0.025	U	0.025	U	0.025	U
Metals	Silver	mg/l	0.006	U	0.006	U	0.006	U	0.006	U
Metals	Sodium	mg/l	18.2		4.3		3.6		2.2	
Metals	Thallium	mg/l	0.02	U	0.02	U	0.02	U	0.02	U
Metals	Vanadium	mg/l	0.029		0.005	U	0.005	U	0.005	U
Metals	Zinc	mg/l	0.091		0.0018	J	0.0041	J	0.0026	J
Hardness	Hardness as CaCO3	mg/l								

U = analyte not detected
J = estimated concentration
ug/L = microgram per liter
mg/L = milligram per liter

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
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		Location	QC		SW-1	
		Sample Date	3/2/2016		3/2/2016	
		Sample ID	TRIP BLANK		SW-1	
		Qc Code	TB		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier
VOCs	1,1,1-Trichloroethane	ug/l	1	U	1	U
VOCs	1,1,2,2-Tetrachloroethane	ug/l	1	U	1	U
VOCs	1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/l	1	U	1	U
VOCs	1,1,2-Trichloroethane	ug/l	1	U	1	U
VOCs	1,1-Dichloroethane	ug/l	1	U	1	U
VOCs	1,1-Dichloroethene	ug/l	1	U	1	U
VOCs	1,2,3-Trichlorobenzene	ug/l	1	U	1	U
VOCs	1,2,4-Trichlorobenzene	ug/l	1	U	1	U
VOCs	1,2-Dibromo-3-chloropropane	ug/l	1	U	1	U
VOCs	1,2-Dibromoethane	ug/l	1	U	1	U
VOCs	1,2-Dichlorobenzene	ug/l	1	U	1	U
VOCs	1,2-Dichloroethane	ug/l	1	U	1	U
VOCs	1,2-Dichloropropane	ug/l	1	U	1	U
VOCs	1,3-Dichlorobenzene	ug/l	1	U	1	U
VOCs	1,4-Dichlorobenzene	ug/l	1	U	1	U
VOCs	1,4-Dioxane	ug/l	40	U	40	U
VOCs	2-Butanone	ug/l	10	U	10	U
VOCs	2-Hexanone	ug/l	5	U	5	U
VOCs	4-Methyl-2-pentanone	ug/l	5	U	5	U
VOCs	Acetic acid, methyl ester	ug/l	2.5	U	2.5	U
VOCs	Acetone	ug/l	10	U	10	U
VOCs	Benzene	ug/l	1	U	1	U
VOCs	Bromochloromethane	ug/l	1	U	1	U
VOCs	Bromodichloromethane	ug/l	1	U	1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	QC		SW-1	
		Sample Date	3/2/2016		3/2/2016	
		Sample ID	TRIP BLANK		SW-1	
		Qc Code	TB		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier
VOCs	Bromoform	ug/l	1	U	1	U
VOCs	Bromomethane	ug/l	1	U	1	U
VOCs	Carbon disulfide	ug/l	1	U	1	U
VOCs	Carbon tetrachloride	ug/l	1	U	1	U
VOCs	Chlorobenzene	ug/l	1	U	1	U
VOCs	Chloroethane	ug/l	1	U	1	U
VOCs	Chloroform	ug/l	1	U	1	U
VOCs	Chloromethane	ug/l	1	U	1	U
VOCs	Cis-1,2-Dichloroethene	ug/l	1	U	1	U
VOCs	Cis-1,3-Dichloropropene	ug/l	1	U	1	U
VOCs	Cyclohexane	ug/l	1	U	1	U
VOCs	Dibromochloromethane	ug/l	1	U	1	U
VOCs	Dichlorodifluoromethane	ug/l	1	U	1	U
VOCs	Ethylbenzene	ug/l	1	U	1	U
VOCs	Isopropylbenzene	ug/l	1	U	1	U
VOCs	Methyl cyclohexane	ug/l	1	U	1	U
VOCs	Methyl Tertbutyl Ether	ug/l	1	U	1	U
VOCs	Methylene chloride	ug/l	0.64	J	1	U
VOCs	Styrene	ug/l	1	U	1	U
VOCs	Tetrachloroethene	ug/l	1	U	1	U
VOCs	Toluene	ug/l	1	U	1	U
VOCs	trans-1,2-Dichloroethene	ug/l	1	U	1	U
VOCs	trans-1,3-Dichloropropene	ug/l	1	U	1	U
VOCs	Trichloroethene	ug/l	1	U	1	U

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	QC		SW-1	
		Sample Date	3/2/2016		3/2/2016	
		Sample ID	TRIP BLANK		SW-1	
		Qc Code	TB		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier
VOCs	Trichlorofluoromethane	ug/l	1	U	1	U
VOCs	Vinyl chloride	ug/l	1	U	1	U
VOCs	Xylenes, Total	ug/l	2	U	2	U
PCBs	Aroclor-1016	ug/l			0.46	U
PCBs	Aroclor-1221	ug/l			0.46	U
PCBs	Aroclor-1232	ug/l			0.46	U
PCBs	Aroclor-1242	ug/l			0.46	U
PCBs	Aroclor-1248	ug/l			0.46	U
PCBs	Aroclor-1254	ug/l			0.46	U
PCBs	Aroclor-1260	ug/l			0.46	U
Metals	Aluminum	mg/l			0.2	U
Metals	Antimony	mg/l			0.02	U
Metals	Arsenic	mg/l			0.015	U
Metals	Barium	mg/l			0.043	
Metals	Beryllium	mg/l			0.002	U
Metals	Cadmium	mg/l			0.002	U
Metals	Calcium	mg/l			75.2	
Metals	Chromium	mg/l			0.004	U
Metals	Cobalt	mg/l			0.004	U
Metals	Copper	mg/l			0.0029	J
Metals	Iron	mg/l			0.11	
Metals	Lead	mg/l			0.01	U
Metals	Magnesium	mg/l			11.7	
Metals	Manganese	mg/l			0.032	

TABLE 2
SUMMARY ANALYTICAL RESULTS - AQUEOUS SAMPLES
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

		Location	QC		SW-1	
		Sample Date	3/2/2016		3/2/2016	
		Sample ID	TRIP BLANK		SW-1	
		Qc Code	TB		FS	
Class	Parameter	Units	Result	Qualifier	Result	Qualifier
Metals	Nickel	mg/l			0.01	U
Metals	Potassium	mg/l			3	
Metals	Selenium	mg/l			0.025	U
Metals	Silver	mg/l			0.006	U
Metals	Sodium	mg/l			4.5	
Metals	Thallium	mg/l			0.02	U
Metals	Vanadium	mg/l			0.005	U
Metals	Zinc	mg/l			0.01	U
Hardness	Hardness as CaCO3	mg/l			236	

U = analyte not detected
J = estimated concentration
ug/L = microgram per liter
mg/L = milligram per liter

TABLE 3
SUMMARY OF QUALIFICATION ACTIONS
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

SDG	Analysis Method	Lab Sample Id	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Val Reason Code	Units	Lab Id
480-95925-1	SW6010C	480-95925-1	MW-4S	Barium	0.036		0.036	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-1	MW-4S	Calcium	72.7		72.7	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-1	MW-4S	Iron	0.62		0.62	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-1	MW-4S	Manganese	0.019		0.019	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-12	MW-3SR2	Barium	0.32		0.32	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-12	MW-3SR2	Calcium	97.6		97.6	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-12	MW-3SR2	Iron	27.9	B	27.9	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-12	MW-3SR2	Manganese	0.72		0.72	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-13	MW-1S	Barium	0.046		0.046	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-13	MW-1S	Calcium	18		18	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-13	MW-1S	Iron	3.8	B	3.8	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-13	MW-1S	Manganese	0.061		0.061	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-14	MW-1B	Barium	0.03		0.03	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-14	MW-1B	Calcium	20.8		20.8	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-14	MW-1B	Iron	1.7	B	1.7	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-14	MW-1B	Manganese	0.023		0.023	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-2	MW-4B	Barium	0.036		0.036	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-2	MW-4B	Calcium	18.6	F1	18.6	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-2	MW-4B	Chromium	0.004	U	0.004	UJ	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-2	MW-4B	Iron	12.4	B F1 F2	12.4	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-2	MW-4B	Manganese	0.1	F1	0.1	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-3	MW-4B DUP	Barium	0.082		0.082	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-3	MW-4B DUP	Calcium	32		32	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-3	MW-4B DUP	Chromium	0.0041		0.0041	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-3	MW-4B DUP	Iron	45.6	B	45.6	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-3	MW-4B DUP	Manganese	0.25		0.25	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-4	MW-3B	Barium	0.13		0.13	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-4	MW-3B	Calcium	9.4		9.4	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-4	MW-3B	Iron	529	B	529	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-4	MW-3B	Manganese	7		7	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-5	MW-3S	Barium	0.098		0.098	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-5	MW-3S	Calcium	67.1		67.1	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-5	MW-3S	Iron	5.8	B	5.8	J	MS-H, MS-RPD, FD	mg/l	TALBFLO

TABLE 3
SUMMARY OF QUALIFICATION ACTIONS
CATEGORY A REVIEW
MARCH 2016 SAMPLING PROGRAM
SOUTH HILL DUMP SITE
CORTLANDVILLE, NEW YORK

SDG	Analysis Method	Lab Sample Id	Field Sample ID	Parameter Name	Lab Result	Lab Qualifier	Validated Result	Validation Qualifier	Val Reason Code	Units	Lab Id
480-95925-1	SW6010C	480-95925-5	MW-3S	Manganese	0.29		0.29	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-6	MW-3BR2	Barium	0.25		0.25	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-6	MW-3BR2	Calcium	81.4		81.4	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-6	MW-3BR2	Iron	109	B	109	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-6	MW-3BR2	Manganese	0.66		0.66	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-7	MW-2D	Barium	0.035		0.035	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-7	MW-2D	Calcium	55.4		55.4	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-7	MW-2D	Iron	0.96	B	0.96	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-7	MW-2D	Manganese	0.037		0.037	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-8	MW-2S	Barium	0.065		0.065	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-8	MW-2S	Calcium	74.2		74.2	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-8	MW-2S	Iron	7.3	B	7.3	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-8	MW-2S	Manganese	0.15		0.15	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-9	MW-2B	Barium	0.092		0.092	J	FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-9	MW-2B	Calcium	30.7		30.7	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-9	MW-2B	Iron	17.4	B	17.4	J	MS-H, MS-RPD, FD	mg/l	TALBFLO
480-95925-1	SW6010C	480-95925-9	MW-2B	Manganese	0.25		0.25	J	MS-H, FD	mg/l	TALBFLO
480-95925-1	SW8260C	480-95925-10	SW-1	Methylene chloride	0.46	J B	1	U	BL1, BL2	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-12	MW-3SR2	Methylene chloride	13	B	13	U	BL1, BL2	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-13	MW-1S	Dichlorodifluoromethane	1	U *	1	UJ	LCS-L	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-14	MW-1B	Dichlorodifluoromethane	1	U *	1	UJ	LCS-L	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-4	MW-3B	Methylene chloride	2.3	B	2.3	U	BL1, BL2	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-5	MW-3S	Methylene chloride	1.4	B	1.4	U	BL1, BL2	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-7	MW-2D	Methylene chloride	0.5	J B	1	U	BL1, BL2	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-8	MW-2S	Methylene chloride	0.48	J B	1	U	BL1, BL2	ug/l	TALBFLO
480-95925-1	SW8260C	480-95925-9	MW-2B	Methylene chloride	0.51	J B	1	U	BL1, BL2	ug/l	TALBFLO

BL1 = method blank qualifier
BL2 = field or trip blank qualifier
FD = RPD between field duplicate results exceeds control limit
MS-H = matrix spike recovery above control limits
MS-RPD = MS/MSD RPD exceeds control limit

ATTACHMENT A

VOCs

PROJECT CATEGORY A REVIEW RECORD
Project: NYSDEC South Hill Dump
Method : SW-846 8260B
Laboratory and SDG(s): TAL Buffalo SDG# 480-95925-1
Date: 3/15/16
Reviewer: Julie Ricardi
Review Level [X] CATEGORY A

1. [☑] **Case Narrative Review and COC/Data Package Completeness** COMMENTS
   Were problems noted? See attached narrative for comments re LCS/LCSD & continuing calibrations for subset of analytes; no primary site contaminants affected.
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)

2. [☑] **Holding time and Sample Collection**
   All samples were analyzed within the 14 day holding time. (YES) NO (circle one)

3. [☑] **QC Blanks**
   Are method blanks free of contamination? YES (NO) (circle one)
   See attached for evaluation & qualifiers
   Are Trip blanks free of contamination? YES (NO) (circle one)
   MeCl2 0.64 ug/L A.L. = 6.4 ug/L; see Method Blank eval for samples qualified for TB and MB (attached)
   Are Rinse blanks free of contamination? YES NO (NA) (circle one)

4. [☑] **Matrix Spike** - Region II limits (water and soil 70-130%, water RPD 20, soil RPD 35)
   Were MS/MSDs submitted/analyzed? (YES) NO
   MW-4B MS/MSD
   Were all results were within the Region II limits? (YES) NO NA (circle one)
   All OK, or high bias indicated but sample results ND ∴ no quals

5. [☑] **Field Duplicates** - Region II Limits (water RPD 50, soil RPD 100)
   Were Field Duplicates submitted/analyzed? (YES) NO
   MW-4B / MW-4B DUP; OK
   Were all results were within Region II Limits? (YES) NO NA (circle one)

6. [☑] **Reporting Limits:** Were samples analyzed at a dilution? (YES) NO (circle one)
   MW-35R2 analyzed at 4x DL due to TCE; elevated RLs reported for all ND results.

7. [☑] **Electronic Data Review and Edits**
   Does the EDD match the Form Is? (YES) NO (circle one)

8. [☑] **Table Review**
   Table 1 (Samples and Analytical Methods)
   Table 2 (Analytical Results)
   Table 3 (Qualification Actions)
   Were all tables produced and reviewed? (YES) NO (circle one)

   Table 4 (TICs) Did lab report TICs? YES (NO) (circle one)

Job ID: 480-95925-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-95925-1

Receipt
The samples were received on 3/3/2016 1:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

* NOTE! No action based on narrative review; Note in Cat A review; affected analytes are not primary site contaminants
GC/MS VOA
Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-289662 recovered above the upper control limit for Methylene Chloride. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data has been reported. The following sample is impacted: SED-1 (480-95925-11). ✓ gr 3/16/16 OK

Method(s) 8260C: Due to the co-elution of Ethyl Acetate with 2-Butanone in the full spike solution, 2-Butanone exceeded control limits in the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) associated with preparation batch 289661 and analytical batch 289662. The following sample is impacted: SED-1 (480-95925-11). OK ✓

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-289704 recovered above the upper control limit for Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-4S (480-95925-1), MW-4B (480-95925-2), MW-4B DUP (480-95925-3), MW-3B (480-95925-4), MW-3S (480-95925-5), MW-3BR2 (480-95925-6), MW-2D (480-95925-7), MW-2S (480-95925-8), MW-2B (480-95925-9), SW-1 (480-95925-10) and MW-3SR2 (480-95925-12). ✓ OK

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-289704 recovered outside acceptance criteria, low biased, for Chloromethane and Carbon disulfide. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. MW-4S (480-95925-1), MW-4B (480-95925-2), MW-4B DUP (480-95925-3), MW-3B (480-95925-4), MW-3S (480-95925-5), MW-3BR2 (480-95925-6), MW-2D (480-95925-7), MW-2S (480-95925-8), MW-2B (480-95925-9), SW-1 (480-95925-10) and MW-3SR2 (480-95925-12). ✓ OK

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3SR2 (480-95925-12). Elevated reporting limits (RLs) are provided. DF = 4x (for TCE); all NDs elevated 4x OK; note

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-289820 recovered outside acceptance criteria, low biased, for Chloromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. MW-1S (480-95925-13), MW-1B (480-95925-14) and TRIP BLANK (480-95925-15). ✓ OK

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-289820 recovered above the upper control limit for Trichlorofluoromethane and Chlorobromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW-1S (480-95925-13), MW-1B (480-95925-14) and TRIP BLANK (480-95925-15). OK ✓

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-289820 recovered outside control limits for the following analytes: Acetone and Dichlorobromomethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The following samples are impacted: MW-1S (480-95925-13), MW-1B (480-95925-14) and TRIP BLANK (480-95925-15) OK ✓

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-289977 recovered above the upper control limit for 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene, Chlorobromomethane, and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: MW-3BR2 (480-95925-6). OK ✓

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-289977 recovered outside control limits for the following analytes: Chlorobromomethane and 1,1-Dichloroethene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The following sample is impacted: MW-3BR2 (480-95925-6). OK ✓

→ LCS applies to dilution run for TCE only ∴ N/A

Job ID: 480-95925-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3BR2 (480-95925-6). Elevated reporting limits (RLs) are provided. -6 diluted for TCE only; all ND QC reported from undiluted analysis

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-289820 recovered outside control limits for the following analyte: Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-analysis was not performed. The following samples are impacted: MW-1S (480-95925-13), MW-1B (480-95925-14) and TRIP BLANK (480-95925-15). MW-1S, MW-1B] UJ DCDFM based on low recovery ~~No qual by lab; no action~~ 3/17/16

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8082A: All primary data for analytical batches 289751 and 289935 is reported from the ZB-35 column.

Method(s) 8082A: The percent difference in a multi-component continuing calibration verification is assessed on the basis of the total amount, individual peak calculations are only listed for completeness.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010C: The method blank for preparation batch 480-289633 and analytical batch 480-290061 contained Total Iron above the reporting limit (RL). Associated sample(s) MW-4B (480-95925-2), MW-4B DUP (480-95925-3), MW-3B (480-95925-4), MW-3S (480-95925-5), MW-3BR2 (480-95925-6), MW-2D (480-95925-7), MW-2S (480-95925-8), MW-2B (480-95925-9), MW-3SR2 (480-95925-12), MW-1S (480-95925-13) and MW-1B (480-95925-14) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 480-289611.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-289661/3-A
Matrix: Solid
Analysis Batch: 289662

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		4.9	0.36	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,1,2,2-Tetrachloroethane	ND		4.9	0.80	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		4.9	1.1	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,1,2-Trichloroethane	ND		4.9	0.64	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,1-Dichloroethane	ND		4.9	0.60	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,1-Dichloroethene	ND		4.9	0.60	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2,3-Trichlorobenzene	ND		4.9	0.52	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2,4-Trichlorobenzene	ND		4.9	0.30	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2-Dibromo-3-Chloropropane	ND		4.9	2.5	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2-Dibromoethane	ND		4.9	0.63	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2-Dichlorobenzene	ND		4.9	0.39	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2-Dichloroethane	ND		4.9	0.25	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,2-Dichloropropane	ND		4.9	2.5	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,3-Dichlorobenzene	ND		4.9	0.25	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,4-Dichlorobenzene Applies to	ND		4.9	0.69	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
1,4-Dioxane SED-1	ND		99	21	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
2-Hexanone	ND		25	2.5	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
4-Methyl-2-pentanone (MIBK)	ND		25	1.6	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Acetone 10x A.L. = 81.6 ug/kg	8.16	J (ND)	25	4.2	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Benzene	ND	no qual	4.9	0.24	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Bromochloromethane	ND		4.9	0.36	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Bromodichloromethane	ND		4.9	0.66	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Bromoform	ND	gr	4.9	2.5	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Bromomethane	ND		4.9	0.44	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Carbon disulfide	ND	3/17/16	4.9	2.5	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Carbon tetrachloride	ND		4.9	0.48	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Chlorobenzene	ND		4.9	0.65	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Chloroethane	ND		4.9	1.1	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Chloroform	ND		4.9	0.30	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Chloromethane	ND		4.9	0.30	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
cis-1,2-Dichloroethene	ND		4.9	0.63	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
cis-1,3-Dichloropropene	ND		4.9	0.71	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Cyclohexane	ND		4.9	0.69	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Dibromochloromethane	ND		4.9	0.63	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Dichlorodifluoromethane	ND		4.9	0.41	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Ethylbenzene	ND		4.9	0.34	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Isopropylbenzene	ND		4.9	0.74	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Methyl acetate	ND		4.9	3.0	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Methyl tert-butyl ether	ND		4.9	0.48	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Methylcyclohexane	ND		4.9	0.75	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Methylene Chloride	ND		4.9	2.3	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Styrene	ND		4.9	0.25	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Tetrachloroethene	ND		4.9	0.66	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Toluene	ND		4.9	0.37	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
trans-1,2-Dichloroethene	ND		4.9	0.51	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
trans-1,3-Dichloropropene	ND		4.9	2.2	ug/Kg		03/03/16 17:52	03/03/16 22:29	1
Trichloroethene	ND		4.9	1.1	ug/Kg		03/03/16 17:52	03/03/16 22:29	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-289704/6
Matrix: Water
Analysis Batch: 289704

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.29	ug/L			03/04/16 12:41	1
1,2,3-Trichlorobenzene	ND		1.0	0.41	ug/L			03/04/16 12:41	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			03/04/16 12:41	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			03/04/16 12:41	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			03/04/16 12:41	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			03/04/16 12:41	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			03/04/16 12:41	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			03/04/16 12:41	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			03/04/16 12:41	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			03/04/16 12:41	1
1,4-Dioxane	ND		40	9.3	ug/L			03/04/16 12:41	1
2-Butanone (MEK)	ND		10	1.3	ug/L			03/04/16 12:41	1
2-Hexanone	ND		5.0	1.2	ug/L			03/04/16 12:41	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			03/04/16 12:41	1
Acetone	ND		10	3.0	ug/L			03/04/16 12:41	1
Benzene	ND		1.0	0.41	ug/L			03/04/16 12:41	1
Bromochloromethane	ND		1.0	0.87	ug/L			03/04/16 12:41	1
Bromodichloromethane	ND		1.0	0.39	ug/L			03/04/16 12:41	1
Bromoform	ND		1.0	0.26	ug/L			03/04/16 12:41	1
Bromomethane	ND		1.0	0.69	ug/L			03/04/16 12:41	1
Carbon disulfide	ND		1.0	0.19	ug/L			03/04/16 12:41	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			03/04/16 12:41	1
Chlorobenzene	ND		1.0	0.75	ug/L			03/04/16 12:41	1
Chloroethane	ND		1.0	0.32	ug/L			03/04/16 12:41	1
Chloroform	ND		1.0	0.34	ug/L			03/04/16 12:41	1
Chloromethane	ND		1.0	0.35	ug/L			03/04/16 12:41	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			03/04/16 12:41	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			03/04/16 12:41	1
Cyclohexane	ND		1.0	0.18	ug/L			03/04/16 12:41	1
Dibromochloromethane	ND		1.0	0.32	ug/L			03/04/16 12:41	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			03/04/16 12:41	1
Ethylbenzene	ND		1.0	0.74	ug/L			03/04/16 12:41	1
Isopropylbenzene	ND		1.0	0.79	ug/L			03/04/16 12:41	1
Methyl acetate	ND		2.5	1.3	ug/L			03/04/16 12:41	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			03/04/16 12:41	1
Methylcyclohexane	ND		1.0	0.16	ug/L			03/04/16 12:41	1
Methylene Chloride	0.918	J	1.0	0.44	ug/L			03/04/16 12:41	1
Styrene	ND		1.0	0.73	ug/L			03/04/16 12:41	1
Tetrachloroethene	ND		1.0	0.36	ug/L			03/04/16 12:41	1
Toluene	ND		1.0	0.51	ug/L			03/04/16 12:41	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			03/04/16 12:41	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			03/04/16 12:41	1
Trichloroethene	ND		1.0	0.46	ug/L			03/04/16 12:41	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			03/04/16 12:41	1
Vinyl chloride	ND		1.0	0.90	ug/L			03/04/16 12:41	1
Xylenes, Total	ND		2.0	0.66	ug/L			03/04/16 12:41	1

Applies to all samples except -11, 13-15

10X A.L. = 9.18 ug/L

(4) -4 ND (2.3 u)
-5 ND (1.4 u)
-7 ND (1 u)
-8 (1 u)
-9 (1 u)
-10 (1 u)
-12 (13 u)

These samples also qualified for TB or detection of MeCl2; else 3/17/16 ND.

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-289704/4
Matrix: Water
Analysis Batch: 289704

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl acetate	125	114		ug/L		91	74 - 133
Methyl tert-butyl ether	25.0	26.9		ug/L		108	64 - 127
Methylcyclohexane	25.0	23.5		ug/L		94	61 - 138
Methylene Chloride	25.0	28.3		ug/L		113	57 - 132
Styrene	25.0	26.4		ug/L		106	70 - 130
Tetrachloroethene	25.0	25.3		ug/L		101	74 - 122
Toluene	25.0	23.3		ug/L		93	80 - 122
trans-1,2-Dichloroethene	25.0	27.1		ug/L		108	73 - 127
Trichloroethene	25.0	28.0		ug/L		112	74 - 123
Trichlorofluoromethane	25.0	31.5		ug/L		126	62 - 152
Vinyl chloride	25.0	20.8		ug/L		83	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*114*		*66 - 137*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*
Toluene-d8 (Surr)	*102*		*71 - 126*

Lab Sample ID: 480-95925-2 MS
Matrix: Water
Analysis Batch: 289704

Client Sample ID: MW-4B
Prep Type: Total/NA

70-130 Region 2

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND	F1	25.0	32.6	F1	ug/L		130	73 - 126
1,1,2,2-Tetrachloroethane	ND		25.0	23.8		ug/L		95	70 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	26.3		ug/L		105	52 - 148
1,1,2-Trichloroethane	ND		25.0	25.4		ug/L		102	76 - 122
1,1-Dichloroethane	ND		25.0	26.4		ug/L		106	71 - 129
1,1-Dichloroethene	ND		25.0	27.3		ug/L		109	58 - 121
1,2,3-Trichlorobenzene	ND		25.0	30.3		ug/L		121	63 - 138
1,2,4-Trichlorobenzene	ND		25.0	29.0		ug/L		116	70 - 122
1,2-Dibromo-3-Chloropropane	ND		25.0	22.1		ug/L		89	56 - 134
1,2-Dibromoethane	ND		25.0	27.8		ug/L		111	77 - 120
1,2-Dichlorobenzene	ND		25.0	28.6		ug/L		114	80 - 124
1,2-Dichloroethane	ND		25.0	28.4		ug/L		114	75 - 127
1,2-Dichloropropane	ND		25.0	26.6		ug/L		106	76 - 120
1,3-Dichlorobenzene	ND		25.0	28.0		ug/L		112	77 - 120
1,4-Dichlorobenzene	ND		25.0	27.8		ug/L		111	75 - 120
1,4-Dioxane	ND		500	439		ug/L		88	50 - 174
2-Butanone (MEK)	ND		125	111		ug/L		89	57 - 140
2-Hexanone	ND		125	102		ug/L		82	65 - 127
4-Methyl-2-pentanone (MIBK)	ND		125	109		ug/L		87	71 - 125
Acetone	ND		125	125		ug/L		100	56 - 142
Benzene	ND		25.0	27.3		ug/L		109	71 - 124
Bromochloromethane	ND	F1	25.0	32.4		ug/L		130	72 - 130
Bromodichloromethane	ND	F1	25.0	30.1		ug/L		120	80 - 122
Bromoform	ND		25.0	28.2		ug/L		113	52 - 132
Bromomethane	ND		25.0	35.0		ug/L		140	55 - 144

JR 3/17/16

OK

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-95925-2 MS
Matrix: Water
Analysis Batch: 289704

Client Sample ID: MW-4B
Prep Type: Total/NA

70-130 lcs 2

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	
Carbon disulfide	ND		25.0	20.2		ug/L		81	59 - 134	
Carbon tetrachloride	ND		25.0	32.6		ug/L		130	72 - 134	
Chlorobenzene	ND		25.0	27.1		ug/L		108	72 - 120	
Chloroethane	ND		25.0	33.3		ug/L		133	69 - 136	OK
Chloroform	ND		25.0	29.5		ug/L		118	73 - 127	
Chloromethane	ND		25.0	22.4		ug/L		90	68 - 124	
cis-1,2-Dichloroethene	0.85	J	25.0	30.1		ug/L		117	74 - 124	
cis-1,3-Dichloropropene	ND		25.0	27.1		ug/L		109	74 - 124	
Cyclohexane	ND		25.0	21.4		ug/L		86	59 - 135	
Dibromochloromethane	ND		25.0	29.8		ug/L		119	75 - 125	
Dichlorodifluoromethane	ND		25.0	21.4		ug/L		85	59 - 135	
Ethylbenzene	ND		25.0	26.5		ug/L		106	77 - 123	
Isopropylbenzene	ND		25.0	26.0		ug/L		104	77 - 122	
Methyl acetate	ND		125	99.0		ug/L		79	74 - 133	
Methyl tert-butyl ether	ND		25.0	26.2		ug/L		105	64 - 127	
Methylcyclohexane	ND		25.0	24.2		ug/L		97	61 - 138	
Methylene Chloride	ND		25.0	28.3		ug/L		113	57 - 132	
Styrene	ND		25.0	27.9		ug/L		112	70 - 130	
Tetrachloroethene	ND		25.0	29.2		ug/L		117	74 - 122	
Toluene	ND		25.0	25.3		ug/L		101	80 - 122	
trans-1,2-Dichloroethene	ND		25.0	29.2		ug/L		117	73 - 127	
Trichloroethene	5.6		25.0	36.2		ug/L		123	74 - 123	
Trichlorofluoromethane	ND	F1	25.0	40.2	F1	ug/L		161	62 - 152	OK
Vinyl chloride	ND		25.0	26.0		ug/L		104	65 - 133	

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*116*		*66 - 137*
4-Bromofluorobenzene (Surr)	*108*		*73 - 120*
Toluene-d8 (Surr)	*102*		*71 - 126*

Lab Sample ID: 480-95925-2 MSD
Matrix: Water
Analysis Batch: 289704

Client Sample ID: MW-4B
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND	F1	25.0	33.2	F1	ug/L		133	73 - 126	OK 2	15
1,1,2,2-Tetrachloroethane	ND		25.0	24.1		ug/L		96	70 - 126	1	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	23.8		ug/L		95	52 - 148	10	20
1,1,2-Trichloroethane	ND		25.0	26.2		ug/L		105	76 - 122	3	15
1,1-Dichloroethane	ND		25.0	27.5		ug/L		110	71 - 129	4	20
1,1-Dichloroethene	ND		25.0	25.5		ug/L		102	58 - 121	7	16
1,2,3-Trichlorobenzene	ND		25.0	30.9		ug/L		124	63 - 138	2	20
1,2,4-Trichlorobenzene	ND		25.0	29.6		ug/L		118	70 - 122	2	20
1,2-Dibromo-3-Chloropropane	ND		25.0	23.0		ug/L		92	56 - 134	4	15
1,2-Dibromoethane	ND		25.0	28.1		ug/L		113	77 - 120	1	15
1,2-Dichlorobenzene	ND		25.0	29.4		ug/L		117	80 - 124	3	20
1,2-Dichloroethane	ND		25.0	29.3		ug/L		117	75 - 127	3	20

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-95925-2 MSD
Matrix: Water
Analysis Batch: 289704

Client Sample ID: MW-4B
Prep Type: Total/NA

70-130 Reg 2

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane	ND		25.0	27.8		ug/L		111	76 - 120	5	20
1,3-Dichlorobenzene	ND		25.0	28.7		ug/L		115	77 - 120	2	20
1,4-Dichlorobenzene	ND		25.0	27.2		ug/L		109	75 - 120	2	20
1,4-Dioxane	ND		500	523		ug/L		105	50 - 174	17	20
2-Butanone (MEK)	ND		125	116		ug/L		93	57 - 140	5	20
2-Hexanone	ND		125	108		ug/L		86	65 - 127	5	15
4-Methyl-2-pentanone (MIBK)	ND		125	114		ug/L		91	71 - 125	4	35
Acetone	ND		125	135		ug/L		108	56 - 142	7	15
Benzene	ND		25.0	27.8		ug/L		111	71 - 124	2	13
Bromochloromethane	ND	F1	25.0	32.8	F1	ug/L		131	72 - 130 OK	1	15
Bromodichloromethane	ND	F1	25.0	31.3	F1	ug/L		125	80 - 122	4	15
Bromoform	ND		25.0	28.5		ug/L		114	52 - 132	1	15
Bromomethane	ND		25.0	32.9		ug/L		132	55 - 144 OK	6	15
Carbon disulfide	ND		25.0	19.3		ug/L		77	59 - 134	5	15
Carbon tetrachloride	ND		25.0	32.7		ug/L		131	72 - 134 OK	0	15
Chlorobenzene	ND		25.0	27.4		ug/L		110	72 - 120	1	25
Chloroethane	ND		25.0	31.1		ug/L		124	69 - 136	7	15
Chloroform	ND		25.0	30.2		ug/L		121	73 - 127	2	20
Chloromethane	ND		25.0	22.5		ug/L		90	68 - 124	0	15
cis-1,2-Dichloroethene	0.85	J	25.0	30.4		ug/L		118	74 - 124	1	15
cis-1,3-Dichloropropene	ND		25.0	27.9		ug/L		112	74 - 124	3	15
Cyclohexane	ND		25.0	21.4		ug/L		86	59 - 135	0	20
Dibromochloromethane	ND		25.0	29.9		ug/L		120	75 - 125	0	15
Dichlorodifluoromethane	ND		25.0	19.3		ug/L		77	59 - 135	10	20
Ethylbenzene	ND		25.0	26.6		ug/L		106	77 - 123	0	15
Isopropylbenzene	ND		25.0	27.2		ug/L		109	77 - 122	5	20
Methyl acetate	ND		125	101		ug/L		80	74 - 133	2	20
Methyl tert-butyl ether	ND		25.0	27.3		ug/L		109	64 - 127	4	37
Methylcyclohexane	ND		25.0	23.5		ug/L		94	61 - 138	3	20
Methylene Chloride	ND		25.0	28.6		ug/L		114	57 - 132	1	15
Styrene	ND		25.0	28.6		ug/L		114	70 - 130	2	20
Tetrachloroethene	ND		25.0	29.6		ug/L		118	74 - 122	1	20
Toluene	ND		25.0	25.8		ug/L		103	80 - 122	2	15
trans-1,2-Dichloroethene	ND		25.0	29.1		ug/L		116	73 - 127	0	20
Trichloroethene	5.6		25.0	36.3		ug/L		123	74 - 123	0	16
Trichlorofluoromethane	ND	F1	25.0	38.6	F1	ug/L		155	62 - 152 OK	4	20
Vinyl chloride	ND		25.0	25.5		ug/L		102	65 - 133	2	15

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*113*		*66 - 137*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*
Toluene-d8 (Surr)	*98*		*71 - 126*

JR
3/17/16

GC/MS VOA

Prep Batch: 289661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-11	SED-1	Total/NA	Solid	5035A	
LCS 480-289661/1-A	Lab Control Sample	Total/NA	Solid	5035A	
LCSD 480-289661/2-A	Lab Control Sample Dup	Total/NA	Solid	5035A	
MB 480-289661/3-A	Method Blank	Total/NA	Solid	5035A	

Analysis Batch: 289662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-11	SED-1	Total/NA	Solid	8260C	289661
LCS 480-289661/1-A	Lab Control Sample	Total/NA	Solid	8260C	289661
LCSD 480-289661/2-A	Lab Control Sample Dup	Total/NA	Solid	8260C	289661
MB 480-289661/3-A	Method Blank no quals needed	Total/NA	Solid	8260C	289661

Analysis Batch: 289704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-1	MW-4S	Total/NA	Water	8260C	
480-95925-2	MW-4B	Total/NA	Water	8260C	
480-95925-2 MS	MW-4B	Total/NA	Water	8260C	
480-95925-2 MSD	MW-4B	Total/NA	Water	8260C	
480-95925-3	MW-4B DUP	Total/NA	Water	8260C	
480-95925-4	MW-3B	Total/NA	Water	8260C	
480-95925-5	MW-3S	Total/NA	Water	8260C	
480-95925-6	MW-3BR2	Total/NA	Water	8260C	
480-95925-7	MW-2D	Total/NA	Water	8260C	
480-95925-8	MW-2S	Total/NA	Water	8260C	
480-95925-9	MW-2B	Total/NA	Water	8260C	
480-95925-10	SW-1	Total/NA	Water	8260C	
480-95925-12	MW-3SR2 elevated RLs 4x	Total/NA	Water	8260C	
LCS 480-289704/4	Lab Control Sample	Total/NA	Water	8260C	
MB 480-289704/6	Method Blank (4) Meoh in	Total/NA	Water	8260C	

Analysis Batch: 289820

subset of samples; see p. 50

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-13	MW-1S	Total/NA	Water	8260C	
480-95925-14	MW-1B	Total/NA	Water	8260C	
480-95925-15	TRIP BLANK	Total/NA	Water	8260C	
LCS 480-289820/4	Lab Control Sample	Total/NA	Water	8260C	
MB 480-289820/6	Method Blank ND	Total/NA	Water	8260C	

Analysis Batch: 289977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-6 - DL	MW-3BR2	Total/NA	Water	8260C	
LCS 480-289977/6	Lab Control Sample	Total/NA	Water	8260C	
MB 480-289977/8	Method Blank ND	Total/NA	Water	8260C	

GC Semi VOA

Prep Batch: 289611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-10	SW-1	Total/NA	Water	3510C	
LCS 480-289611/2-A	Lab Control Sample	Total/NA	Water	3510C	

No Quals
QR 3/17/16

PCBs

NYSDEC PROJECT CATEGORY A REVIEW RECORD
Project: NYSDEC South Hill Dump
Method : 8082
Laboratory and SDG(s): TAL Buffalo #480-95925-1
Date: 3/17/16
Reviewer: Julie Ricardi
Review Level [X] Category A Review

1. ☑ **Case Narrative Review and Data Package Completeness**
See attached narrative; no problems noted
Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)

Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)

2. ☑ **Holding time and Sample Collection**
There is no holding time requirement in Method 8082 (Chapter 4, Table 4-1 of SW-846)

Were samples properly preserved? (YES) NO (circle one)

3. ☑ **QC Blanks**
Are method blanks free of contamination? (YES) NO (circle one)

Are Rinse blanks free of contamination? YES NO (NA) (circle one)

6. ☑ **Matrix Spike** (soil and water limits: 29-135% and RPD of 20, RPD is 15 for Aroclor 1016)

Were MS/MSDs submitted/analyzed? YES (NO) (circle one)

Were all results were within limits? YES NO (NA) (circle one)

7. ☑ **Field Duplicates** (RPD limits for soil=100, water = 50)
Were Field Duplicates submitted/analyzed? YES (NO)

Were RPDs within the limits? YES NO (NA) (circle one)

9. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES (NO) (circle one)

10. ☑ **Electronic Data Review and Edits**

Does the EDD match the Form I's? (YES) NO (circle one)

11. ☑ **Table Review** **Table 1** (sample Listing), **Table 2** (results summary), **Table 3** (Reason Codes).
Table 1 (Samples and Analytical Methods)
Table 2 (Analytical Results)
Table 3 (Qualification Actions)

Were all tables produced and reviewed? (YES) NO (circle one)

Job ID: 480-95925-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3BR2 (480-95925-6). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-289820 recovered outside control limits for the following analyte: Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-analysis was not performed. The following samples are impacted: MW-1S (480-95925-13), MW-1B (480-95925-14) and TRIP BLANK (480-95925-15) .

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8082A: All primary data for analytical batches 289751 and 289935 is reported from the ZB-35 column. ✓ All OK

Method(s) 8082A: The percent difference in a multi-component continuing calibration verification is assessed on the basis of the total amount, individual peak calculations are only listed for completeness. ✓

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010C: The method blank for preparation batch 480-289633 and analytical batch 480-290061 contained Total Iron above the reporting limit (RL). Associated sample(s) MW-4B (480-95925-2), MW-4B DUP (480-95925-3), MW-3B (480-95925-4), MW-3S (480-95925-5), MW-3BR2 (480-95925-6), MW-2D (480-95925-7), MW-2S (480-95925-8), MW-2B (480-95925-9), MW-3SR2 (480-95925-12), MW-1S (480-95925-13) and MW-1B (480-95925-14) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 480-289611.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS

NYSDEC CATEGORY A REVIEW RECORD
Project: NYSDEC South Hill Dump
Method: 6010C and hardness 2340B
Laboratory and SDG(s): TAL Buffalo #480-95925-1
Date: 3/17/16
Reviewer: Julie Ricardi

Review Level [X] CATEGORY A

1. ☑ **Case Narrative Review and Data Package Completeness** COMMENTS
   Were all the samples on the COC analyzed for the requested analyses? (YES) NO (circle one)
   Narrative notes blank contamination for iron; see blank eval.
   Are Field Sample IDs and Locations assigned correctly? (YES) NO (circle one)

2. ☑ **Holding time and Sample Collection**
   Were all samples prepared and analyzed with the holding time (6 months)? (YES) NO

3. ☑ **QC Blanks**
   Are method blanks free of contamination? YES (NO) (circle one)
   NO quals needed; all assoc. sample results > 5x blank conc.
   Are Rinse blanks free of contamination? YES NO (NA) (circle one)

4. ☑ **Matrix Spike**
   Were MS/MSDs submitted/analyzed? (YES) NO
   MW-4B
   Were all results were within 75-125% limits? YES (NO) NA (circle one)
   See attached summary for (quals)

5. ☑ **Field Duplicates**
   Were Field Duplicates submitted/analyzed? (YES) NO
   MW-4B/MW4B DUP: See attached summary for (quals.)
   Aqueous RPD within limit? (20) YES (NO) NA (circle one) See attached summary
   Soil RPD within limit? (35) YES NO (NA) (circle one)

6. ☑ **Reporting Limits:** Were samples analyzed at a dilution? YES (NO) (circle one)

7. ☑ **Electronic Data Review and Edits:** Does the EDD match the Form Is? (YES) NO (circle one)

8. ☑ **Table Review:**
   Table 1 (Samples and Analytical Methods)
   Table 2 (Analytical Results)
   Table 3 (Qualification Actions)
   Were all tables produced and reviewed? (YES) NO (circle one)

Job ID: 480-95925-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-3BR2 (480-95925-6). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The laboratory control sample (LCS) for analytical batch 480-289820 recovered outside control limits for the following analyte: Dichlorodifluoromethane. Dichlorodifluoromethane has been identified as a poor performing analyte when analyzed using this method; therefore, re-analysis was not performed. The following samples are impacted: MW-1S (480-95925-13), MW-1B (480-95925-14) and TRIP BLANK (480-95925-15) .

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8082A: All primary data for analytical batches 289751 and 289935 is reported from the ZB-35 column.

Method(s) 8082A: The percent difference in a multi-component continuing calibration verification is assessed on the basis of the total amount, individual peak calculations are only listed for completeness.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010C: The method blank for preparation batch 480-289633 and analytical batch 480-290061 contained Total Iron above the reporting limit (RL). Associated sample(s) MW-4B (480-95925-2), MW-4B DUP (480-95925-3), MW-3B (480-95925-4), MW-3S (480-95925-5), MW-3BR2 (480-95925-6), MW-2D (480-95925-7), MW-2S (480-95925-8), MW-2B (480-95925-9), MW-3SR2 (480-95925-12), MW-1S (480-95925-13) and MW-1B (480-95925-14) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank. ✓ See blank eval 3/17/16

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 480-289611.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 480-289631/1-A
Matrix: Solid
Analysis Batch: 289935

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289631

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.23	0.045	mg/Kg		03/03/16 14:37	03/07/16 13:18	1
PCB-1221	ND		0.23	0.045	mg/Kg		03/03/16 14:37	03/07/16 13:18	1
PCB-1232	ND		0.23	0.045	mg/Kg		03/03/16 14:37	03/07/16 13:18	1
PCB-1242	ND		0.23	0.045	mg/Kg		03/03/16 14:37	03/07/16 13:18	1
PCB-1248	ND		0.23	0.045	mg/Kg		03/03/16 14:37	03/07/16 13:18	1
PCB-1254	ND		0.23	0.11	mg/Kg		03/03/16 14:37	03/07/16 13:18	1
PCB-1260	ND		0.23	0.11	mg/Kg		03/03/16 14:37	03/07/16 13:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*89*		*65 - 174*	*03/03/16 14:37*	*03/07/16 13:18*	*1*
DCB Decachlorobiphenyl	*149*		*65 - 174*	*03/03/16 14:37*	*03/07/16 13:18*	*1*
Tetrachloro-m-xylene	*112*		*60 - 154*	*03/03/16 14:37*	*03/07/16 13:18*	*1*
Tetrachloro-m-xylene	*154*		*60 - 154*	*03/03/16 14:37*	*03/07/16 13:18*	*1*

Lab Sample ID: LCS 480-289631/2-A
Matrix: Solid
Analysis Batch: 289935

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 289631

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	2.25	2.91		mg/Kg		129	51 - 185
PCB-1260	2.25	2.94		mg/Kg		130	61 - 184

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*78*		*65 - 174*
DCB Decachlorobiphenyl	*129*		*65 - 174*
Tetrachloro-m-xylene	*98*		*60 - 154*
Tetrachloro-m-xylene	*139*		*60 - 154*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-289585/1-A
Matrix: Solid
Analysis Batch: 289855

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		10.1	4.4	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Antimony	ND		15.1	0.40	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Arsenic	ND		2.0	0.40	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Barium	ND		0.50	0.11	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Beryllium	ND		0.20	0.028	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Cadmium	ND		0.20	0.030	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Calcium	3.96 J		50.3	3.3	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Chromium	ND		0.50	0.20	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Cobalt	ND		0.50	0.050	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Copper	ND		1.0	0.21	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Iron	ND		10.1	3.5	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Lead	ND		1.0	0.24	mg/Kg		03/03/16 12:00	03/04/16 14:07	1

Applies to SED-1

Sample > 5x 5x = 19.8 no qual

gn 3/17/16

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-289585/1-A
Matrix: Solid
Analysis Batch: 289855

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289585

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		20.1	0.93	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Manganese	ND		0.20	0.032	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Nickel	ND		5.0	0.23	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Potassium	ND		30.2	20.1	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Selenium	ND		4.0	0.40	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Silver	ND		0.60	0.20	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Sodium	21.69	J	141	13.1	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Thallium	ND		6.0	0.30	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Vanadium	ND		0.50	0.11	mg/Kg		03/03/16 12:00	03/04/16 14:07	1
Zinc	ND		2.0	0.64	mg/Kg		03/03/16 12:00	03/04/16 14:07	1

Applies to SED-1

Sample > 5x : no qual on 3/17/16

5x = 108 mg/kg

Lab Sample ID: LCDSRM 480-289585/3-A
Matrix: Solid
Analysis Batch: 289855

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 289585

Analyte	Spike Added	LCDSRM Result	LCDSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	7930	8056		mg/Kg		101.6	39.0 - 161.4	12	20
Antimony	105	73.26		mg/Kg		69.8	20.4 - 254.3	8	20
Arsenic	98.5	79.89		mg/Kg		81.1	69.3 - 145.2	10	20
Barium	308	250.3		mg/Kg		81.3	74.0 - 126.0	7	20
Beryllium	66.0	54.80		mg/Kg		83.0	73.6 - 126.4	6	20
Cadmium	146	124.4		mg/Kg		85.2	73.3 - 126.7	1	20
Calcium	6610	5964		mg/Kg		90.2	74.1 - 125.9	2	20
Chromium	182	150.4		mg/Kg		82.6	70.9 - 129.7	8	20
Cobalt	162	156.7		mg/Kg		96.7	74.1 - 125.3	3	20
Copper	106	84.54		mg/Kg		79.8	74.5 - 125.5	10	20
Iron	14400	12990		mg/Kg		90.2	35.6 - 163.9	18	20
Lead	130	113.6		mg/Kg		87.4	72.5 - 126.9	18	20
Magnesium	2640	2207		mg/Kg		83.6	64.4 - 136.0	11	20
Manganese	410	342.7		mg/Kg		83.6	76.3 - 123.9	6	20
Nickel	149	145.8		mg/Kg		97.8	73.2 - 126.8	4	20
Potassium	2550	2406		mg/Kg		94.3	60.8 - 138.8	9	20
Selenium	154	128.3		mg/Kg		83.3	67.5 - 132.5	6	20
Silver	40.9	31.60		mg/Kg		77.3	66.0 - 133.7	8	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSSRM 480-289585/2-A
Matrix: Solid
Analysis Batch: 289855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 289585

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	96.7	94.02		mg/Kg		97.2	64.4 - 135.5
Zinc	191	165.6		mg/Kg		86.7	69.6 - 130.4

Lab Sample ID: MB 480-289633/1-A
Matrix: Water
Analysis Batch: 290061

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 289633

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.060	mg/L		03/04/16 07:12	03/07/16 10:48	1
Antimony	ND		0.020	0.0068	mg/L		03/04/16 07:12	03/07/16 10:48	1
Arsenic	ND		0.015	0.0056	mg/L		03/04/16 07:12	03/07/16 10:48	1
Barium	ND		0.0020	0.00070	mg/L		03/04/16 07:12	03/07/16 10:48	1
Beryllium	ND		0.0020	0.00030	mg/L		03/04/16 07:12	03/07/16 10:48	1
Cadmium	ND		0.0020	0.00050	mg/L		03/04/16 07:12	03/07/16 10:48	1
Calcium	ND		0.50	0.10	mg/L		03/04/16 07:12	03/07/16 10:48	1
Chromium	ND		0.0040	0.0010	mg/L		03/04/16 07:12	03/07/16 10:48	1
Cobalt	ND		0.0040	0.00063	mg/L		03/04/16 07:12	03/07/16 10:48	1
Copper	ND		0.010	0.0016	mg/L		03/04/16 07:12	03/07/16 10:48	1
Iron	0.0515		0.050	0.019	mg/L		03/04/16 07:12	03/07/16 10:48	1
Lead	ND		0.010	0.0030	mg/L		03/04/16 07:12	03/07/16 10:48	1
Magnesium	ND		0.20	0.043	mg/L		03/04/16 07:12	03/07/16 10:48	1
Manganese	ND		0.0030	0.00040	mg/L		03/04/16 07:12	03/07/16 10:48	1
Nickel	ND		0.010	0.0013	mg/L		03/04/16 07:12	03/07/16 10:48	1
Potassium	ND		0.50	0.10	mg/L		03/04/16 07:12	03/07/16 10:48	1
Selenium	ND		0.025	0.0087	mg/L		03/04/16 07:12	03/07/16 10:48	1
Silver	ND		0.0060	0.0017	mg/L		03/04/16 07:12	03/07/16 10:48	1
Sodium	ND		1.0	0.32	mg/L		03/04/16 07:12	03/07/16 10:48	1
Thallium	ND		0.020	0.010	mg/L		03/04/16 07:12	03/07/16 10:48	1
Vanadium	ND		0.0050	0.0015	mg/L		03/04/16 07:12	03/07/16 10:48	1
Zinc	ND		0.010	0.0015	mg/L		03/04/16 07:12	03/07/16 10:48	1

Applies to 9-2 thru -10, -12 thru -14

All samples > 5x (0.0515) 5x = 0.26 mg/L ∴ no quals

JN 3/17/16

Lab Sample ID: LCS 480-289633/2-A
Matrix: Water
Analysis Batch: 290061

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 289633

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	10.0	9.85		mg/L		99	80 - 120
Antimony	0.200	0.196		mg/L		98	80 - 120
Arsenic	0.200	0.201		mg/L		100	80 - 120
Barium	0.200	0.206		mg/L		103	80 - 120
Beryllium	0.200	0.206		mg/L		103	80 - 120
Cadmium	0.200	0.197		mg/L		98	80 - 120
Calcium	10.0	9.80		mg/L		98	80 - 120
Chromium	0.200	0.205		mg/L		102	80 - 120
Cobalt	0.200	0.196		mg/L		98	80 - 120
Copper	0.200	0.202		mg/L		101	80 - 120
Iron	10.0	10.00		mg/L		100	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-289633/2-A
Matrix: Water
Analysis Batch: 290061

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 289633

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.200	0.199		mg/L		100	80 - 120
Magnesium	10.0	10.13		mg/L		101	80 - 120
Manganese	0.200	0.202		mg/L		101	80 - 120
Nickel	0.200	0.194		mg/L		97	80 - 120
Potassium	10.0	9.87		mg/L		99	80 - 120
Selenium	0.200	0.198		mg/L		99	80 - 120
Silver	0.0500	0.0500		mg/L		100	80 - 120
Sodium	10.0	9.85		mg/L		98	80 - 120
Thallium	0.200	0.198		mg/L		99	80 - 120
Vanadium	0.200	0.209		mg/L		104	80 - 120
Zinc	0.200	0.202		mg/L		101	80 - 120

MW-4B
MS | MSD

Lab Sample ID: 480-95925-2 MS
Matrix: Water
Analysis Batch: 290061

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 289633

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	ND		10.0	10.43		mg/L		104	75 - 125
Antimony	ND		0.200	0.210		mg/L		105	75 - 125
Arsenic	ND		0.200	0.220		mg/L		110	75 - 125
Barium	0.036		0.200	0.258		mg/L		111	75 - 125
Beryllium	ND		0.200	0.218		mg/L		109	75 - 125
Cadmium	ND		0.200	0.212		mg/L		106	75 - 125
Calcium	18.6	F1	10.0	29.34		mg/L		108	75 - 125
Chromium	ND		0.200	0.222		mg/L		111	75 - 125
Cobalt	ND		0.200	0.209		mg/L		105	75 - 125
Copper	0.0017	J	0.200	0.217		mg/L		107	75 - 125
Iron	12.4	B F1 F2	10.0	25.47	F1	mg/L		131	75 - 125
Lead	ND		0.200	0.212		mg/L		106	75 - 125
Magnesium	6.7		10.0	17.19		mg/L		105	75 - 125
Manganese	0.10	F1	0.200	0.326		mg/L		113	75 - 125
Nickel	ND		0.200	0.209		mg/L		105	75 - 125
Potassium	0.57		10.0	10.99		mg/L		104	75 - 125
Selenium	ND		0.200	0.214		mg/L		107	75 - 125
Silver	ND		0.0500	0.0523		mg/L		105	75 - 125
Sodium	4.3		10.0	14.36		mg/L		101	75 - 125
Thallium	ND		0.200	0.213		mg/L		106	75 - 125
Vanadium	ND		0.200	0.221		mg/L		110	75 - 125
Zinc	0.0018	J	0.200	0.217		mg/L		107	75 - 125

J+ MS-H all MW samples

Lab Sample ID: 480-95925-2 MSD
Matrix: Water
Analysis Batch: 290061

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 289633

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	ND		10.0	10.49		mg/L		105	75 - 125	1	20
Antimony	ND		0.200	0.212		mg/L		106	75 - 125	1	20
Arsenic	ND		0.200	0.219		mg/L		109	75 - 125	1	20
Barium	0.036		0.200	0.278		mg/L		121	75 - 125	7	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 480-95925-2 MSD
Matrix: Water
Analysis Batch: 290061

Apply to all GW samples

Client Sample ID: MW-4B
Prep Type: Total/NA
Prep Batch: 289633

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		0.200	0.219		mg/L		109	75 - 125	0	20
Cadmium	ND		0.200	0.214		mg/L		107	75 - 125	1	20
Calcium	18.6	F1	10.0	34.23	F1	mg/L		157	75 - 125	15	20
Chromium	ND		0.200	0.221		mg/L		111	75 - 125	0	20
Cobalt	ND		0.200	0.210		mg/L		105	75 - 125	0	20
Copper	0.0017	J	0.200	0.216		mg/L		107	75 - 125	0	20
Iron	12.4	B F1 F2	10.0	37.52	F1 F2	mg/L		251	75 - 125	38	20
Lead	ND		0.200	0.213		mg/L		106	75 - 125	0	20
Magnesium	6.7		10.0	17.65		mg/L		110	75 - 125	3	20
Manganese	0.10	F1	0.200	0.389	F1	mg/L		144	75 - 125	18	20
Nickel	ND		0.200	0.211		mg/L		106	75 - 125	1	20
Potassium	0.57		10.0	11.16		mg/L		106	75 - 125	2	20
Selenium	ND		0.200	0.214		mg/L		107	75 - 125	0	20
Silver	ND		0.0500	0.0528		mg/L		106	75 - 125	1	20
Sodium	4.3		10.0	14.19		mg/L		99	75 - 125	1	20
Thallium	ND		0.200	0.215		mg/L		107	75 - 125	1	20
Vanadium	ND		0.200	0.220		mg/L		110	75 - 125	1	20
Zinc	0.0018	J	0.200	0.216		mg/L		107	75 - 125	0	20

J+ MS-H

J+ MS-H, MS-RPD

J+ MS-H

Applies to all MW samples

Lab Sample ID: MB 480-290216/1-A
Matrix: Water
Analysis Batch: 290421

JR 3/17/16

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290216

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	✓	0.050	0.019	mg/L		03/09/16 08:00	03/09/16 16:24	1

Lab Sample ID: LCS 480-290216/2-A
Matrix: Water
Analysis Batch: 290421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290216

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10.0	10.25		mg/L		103	80 - 120

Lab Sample ID: LCSD 480-290216/3-A
Matrix: Water
Analysis Batch: 290421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290216

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	10.0	10.46		mg/L		105	80 - 120	2	20

Metals (Continued)

Analysis Batch: 289855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-11	SED-1	Total/NA	Solid	6010C	289585
LCDSRM 480-289585/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	289585
LCSSRM 480-289585/2-A	Lab Control Sample	Total/NA	Solid	6010C	289585
MB 480-289585/1-A	Method Blank Ca, Na / no quals	Total/NA	Solid	6010C	289585

Analysis Batch: 290061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-1	MW-4S	Total/NA	Water	6010C	289633
480-95925-2	MW-4B	Total/NA	Water	6010C	289633
480-95925-2 MS	MW-4B	Total/NA	Water	6010C	289633
480-95925-2 MSD	MW-4B	Total/NA	Water	6010C	289633
480-95925-3	MW-4B DUP	Total/NA	Water	6010C	289633
480-95925-4	MW-3B	Total/NA	Water	6010C	289633
480-95925-5	MW-3S	Total/NA	Water	6010C	289633
480-95925-6	MW-3BR2	Total/NA	Water	6010C	289633
480-95925-7	MW-2D	Total/NA	Water	6010C	289633
480-95925-8	MW-2S	Total/NA	Water	6010C	289633
480-95925-9	MW-2B	Total/NA	Water	6010C	289633
480-95925-10	SW-1	Total/NA	Water	6010C	289633
480-95925-12	MW-3SR2	Total/NA	Water	6010C	289633
480-95925-13	MW-1S	Total/NA	Water	6010C	289633
480-95925-14	MW-1B	Total/NA	Water	6010C	289633
LCS 480-289633/2-A	Lab Control Sample	Total/NA	Water	6010C	289633
MB 480-289633/1-A	Method Blank Fe / no quals	Total/NA	Water	6010C	289633

Prep Batch: 290216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-1	MW-4S	Total/NA	Water	3005A	
480-95925-10	SW-1	Total/NA	Water	3005A	
LCS 480-290216/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 480-290216/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
MB 480-290216/1-A	Method Blank	Total/NA	Water	3005A	

Analysis Batch: 290254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-10	SW-1	Total/NA	Water	SM 2340B	

Analysis Batch: 290421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-1	MW-4S	Total/NA	Water	6010C	290216
480-95925-10	SW-1	Total/NA	Water	6010C	290216
LCS 480-290216/2-A	Lab Control Sample	Total/NA	Water	6010C	290216
LCSD 480-290216/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	290216
MB 480-290216/1-A	Method Blank ND	Total/NA	Water	6010C	290216

General Chemistry

Analysis Batch: 289683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-95925-11	SED-1	Total/NA	Solid	Moisture	

3/17/16

Metals 480-95925-1 Field Duplicate Eval

Field Sample ID	Lab Sample ID	Method	Parameter	SDG	Sample	Qual	Qual Code	FD	Qual	RPD	Units	MDL	RL	
MW-4B	480-95925-2	SW6010C	Aluminum	480-95925-1	0.20	U		0.20	U	0.0	mg/L	0.060	0.2	OK
MW-4B	480-95925-2	SW6010C	Antimony	480-95925-1	0.020	U		0.020	U	0.0	mg/L	0.0068	0.02	OK
MW-4B	480-95925-2	SW6010C	Arsenic	480-95925-1	0.015	U		0.015	U	0.0	mg/L	0.0056	0.015	OK
MW-4B	480-95925-2	SW6010C	Barium	480-95925-1	0.036			0.082		78.0	mg/L	0.00070	0.002	J all GW results
MW-4B	480-95925-2	SW6010C	Beryllium	480-95925-1	0.0020	U		0.0020	U	0.0	mg/L	0.00030	0.002	OK
MW-4B	480-95925-2	SW6010C	Cadmium	480-95925-1	0.0020	U		0.0020	U	0.0	mg/L	0.00050	0.002	OK
MW-4B	480-95925-2	SW6010C	Calcium	480-95925-1	18.6	J	MS-H	32.0	J	53.0	mg/L	0.10	0.5	J all GW results
MW-4B	480-95925-2	SW6010C	Chromium	480-95925-1	0.0040	U		0.0041		2.5	mg/L	0.0010	0.004	J/UJ sample and DUP
MW-4B	480-95925-2	SW6010C	Cobalt	480-95925-1	0.0040	U		0.0040	U	0.0	mg/L	0.00063	0.004	OK
MW-4B	480-95925-2	SW6010C	Copper	480-95925-1	0.0017	J		0.0053	J	102.9	mg/L	0.0016	0.01	OK
MW-4B	480-95925-2	SW6010C	Iron	480-95925-1	12.4	J	MS-H, MS-RPD	45.6	J	114.5	mg/L	0.019	0.05	J all GW results
MW-4B	480-95925-2	SW6010C	Lead	480-95925-1	0.010	U		0.010	U	0.0	mg/L	0.0030	0.01	OK
MW-4B	480-95925-2	SW6010C	Magnesium	480-95925-1	6.7			7.6		12.6	mg/L	0.043	0.2	OK
MW-4B	480-95925-2	SW6010C	Manganese	480-95925-1	0.10	J	MS-H	0.25	J	85.7	mg/L	0.00040	0.003	J all GW results
MW-4B	480-95925-2	SW6010C	Nickel	480-95925-1	0.010	U		0.0049	J	68.5	mg/L	0.0013	0.01	OK
MW-4B	480-95925-2	SW6010C	Potassium	480-95925-1	0.57			0.41	J	32.7	mg/L	0.10	0.5	OK
MW-4B	480-95925-2	SW6010C	Selenium	480-95925-1	0.025	U		0.025	U	0.0	mg/L	0.0087	0.025	OK
MW-4B	480-95925-2	SW6010C	Silver	480-95925-1	0.0060	U		0.0060	U	0.0	mg/L	0.0017	0.006	OK
MW-4B	480-95925-2	SW6010C	Sodium	480-95925-1	4.3			3.6		17.7	mg/L	0.32	1	OK
MW-4B	480-95925-2	SW6010C	Thallium	480-95925-1	0.020	U		0.020	U	0.0	mg/L	0.010	0.02	OK
MW-4B	480-95925-2	SW6010C	Vanadium	480-95925-1	0.0050	U		0.0050	U	0.0	mg/L	0.0015	0.005	OK
MW-4B	480-95925-2	SW6010C	Zinc	480-95925-1	0.0018	J		0.0041	J	78.0	mg/L	0.0015	0.01	OK

Prepared by: JAR 3/24/16