GREAT LAKES ENVIRONMENTAL
& SAFETY CONSULTANTS, INC.

(Sent as a PDF via email)

September 13, 2019

Hon. David Smith, Mayor
Village of Gowanda
27 E Main Street
Gowanda, NY 14070

and

Mike Hutchinson, President
Gowanda Area Redevelopment Corporation
27 E Main Street
Gowanda, NY 14070

Re: Peter Cooper Superfund Site / Zoar Valley Gateway Park
Periodic Review Report and certifications for reporting year 2018

Dear Mayor Smith and Mr. Hutchinson:

Great Lakes Environmental & Safety Consultants, Inc. ("Great Lakes") is pleased to submit to the Village of Gowanda and Gowanda Area Redevelopment Corporation the Periodic Review Report for the Peter Cooper Site, per the 2010 Site Management Plan.

The PRR documents that the site Institutional Controls remain in place and are being enforced, and that the Engineering Controls are operating as intended and remain protective of human health and the environment.

We thank you for the opportunity to assist you on this important project.

Sincerely,

Evan J. Casey
President

hc/ec: Deborah J. Chadsey, Esq.

Periodic Review Report

PETER COOPER SUPERFUND SITE

Site no. NYD980530265

Zoar Valley Gateway Park

Palmer Road
Village of Gowanda
Cattaraugus County NY

CY 2018 Reporting Period

September 12, 2019

Prepared for:

Village of Gowanda
and
Gowanda Area Redevelopment Corporation
28 East Main Street
Gowanda NY 14070

Periodic Review Report

PETER COOPER LANDFILL SUPERFUND SITE
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Palmer Road
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CERTIFICATION

To the best of my knowledge I certify that the information and statements in this Periodic Review Report is true, accurate, and complete.

After inspection of the site under my direction, and investigating its operation and maintenance and monitoring during 2018, and all information available to me, I conclude that the site Institutional Controls remain in place and are protective of human health and the environment. I also conclude that the Engineering Controls remain in place, and all indications are that they are operating as intended, and that they remain protective of human health and the environment.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Engineer: Ken W. Kloeber PE
NYSPE 60350

Digitally signed by IDVault
Date: 2019.09.14 00:17:55 -04'00'

I INTRODUCTION

1.1 Summary of Site

The Peter Cooper Superfund Site, identified as site no. NYD980530265 on the *National Priorities List*, is north of Palmer Road in the Village of Gowanda; Cattaraugus County, NY (see Figure 1.) It encompasses approximately 26-acres adjacent to and 3,000-frontage along the south bank of Cattaraugus Creek—an important western NY natural resource that has a Class C Trout stream water quality standard designation by the NYS Department of Environmental Conservation.

The property historically housed manufacturing plants operated by various owners that produced both animal glues and industrial adhesives from the early 1900s to 1985. The site is known as the "Peter Cooper Site" because the Peter Cooper Corporations was the most prominent and historically significant manufacturer and was the last to manufacture adhesives there until 1985.

The Peter Cooper site consists of two property components—*an eastern 23.4-acre parcel* owned by the Gowanda Area Redevelopment Corporation, and *the western-most approximate 2.6 acres* being the eastern-half of a ~five-acre parcel owned by the NYS Electric and Gas Corporation. Both components have waterfront access to Cattaraugus Creek, and the western limit of the Peter Cooper site is defined by a concrete dam on the NYSEG property that remains from a former hydroelectric station, grist mill, and foundry.

The site is further characterized by a former manufacturing plant area (~10.6 acres) on the eastern end and a remediated inactive landfill (~15.6 acres) on the western end. The western end of the inactive landfill contains a remediated elevated fill area (~five acres) that falls approximately equally on the NYSEG and GARC properties.

In 1998, the USEPA added the Peter Cooper Site to the National Priorities List and in March 2000 ordered the Potentially Responsible Parties to prepare an *RI/FS* to define the site contamination and identify clean-up potentials. Benchmark Environmental Engineering and Science, PLLC, was lead consultant and prepared the remedial studies during the period August 2000 to June 2005. The Village concurrently investigated potential reuse possibilities in order to avoid the Site from becoming a "cap and a fence" hazardous waste site situated near residences, a skilled nursing facility, and Cattaraugus Creek, and commissioned the Center for Integrated Waste Management at the State University of NY at Buffalo to investigate reuse options under the USEPA Superfund Redevelopment Initiative program.

1.2 Nature and Extent of Contamination

The western-five-acre, elevated fill area is where the manufacturers had landfilled sludge from the glue-making process for and contamination remained from animal hides that were obtained from tanneries for the glue making. Historically, contaminated groundwater seeps from the landfill had been discovered along the bank of Cattaraugus Creek. This led to prior USEPA and NYSDEC actions in the 1990s and a partial remediation on NYSEG property, which is the most westerly segment of the Peter Cooper Superfund Site.

Benchmark's Remedial Investigations determined that the contaminants present that exceeded (to varying degrees) regulatory limits and/or guidance values were metals (arsenic, chromium, copper, iron, lead, manganese, mercury, sodium, zinc); VOCs/SVOCs (benzene, chlorobenzene, 1,2-dichlorobenzene, cis-l,2-dichloroethene, 2-butanone, 4-methylphenol, acetone, benzene, naphthalene, toluene, xylenes, phenol, pentachlorophenol, phenanthrene); and ammonia, sulfates; hydrogen sulfide, carbon monoxide, and methane. Without distinction as to where they occurred or their concentrations, the individual contaminants of concern were found in some or all of the mediae sampled (ground water, soil on the inactive landfill, soil and landfill gas on the elevated waste fill, Cattaraugus Creek surface water, and creek and adjacent wetland sediments.)

See the 2005 *EPA Record of Decision* for the numerical analytical results of the sampling, specifically *ROD Table 1* (overburden groundwater on the inactive landfill); *Table 2* - (overburden groundwater on the former manufacturing plant area); *Table 3* (bedrock groundwater on the inactive landfill); *Table 4* (bedrock groundwater on the former manufacturing area); *Table 5* (creek bank samples from the inactive landfill); *Table 6* (surface soils on the inactive landfill); *Table 7* (subsurface soils on the inactive landfill); and *Table 8* (subsurface soils on the former manufacturing plant area.)

1.3 Selected Remedial Program for the Site

Partial remediation prior to the most-recent remedy consisted of removing waste from the elevated fill area to offsite and NYSEG hard-facing the creek bank with rip-rap to reinforce it and prevent the creek from eroding into the inactive hazardous waste landfill. The remains of a former concrete hydroelectric dam defines the west end of the landfill area, and contains the waste and controls leachate migration.

1.3.1 USEPA Record of Decision (2005)

Based on Benchmark's RI/FS work, the USEPA issued a *Record of Decision* (September 2005) that summarized the components required to encapsulate the contamination on the site in order to protect human health and the environment. The 2005 *ROD* and a *Consent Decree* (February 2009) between the USEPA and 19 PRPs, and the project *Remedial Design Work Plan* (March 2009,) all enumerated the components of the adopted remedial program. In the February 2009 *CD,* 15 of the PRPs ("performing PRPs") agreed to implement these remedial measures:

- Institutional controls (restrictive covenants and an environmental easement) to limit use of the site and groundwater to ensure that the remedial measures remain intact and that use of the site is compatible with the remedial action and subsequent redevelopment.
- Excavating and consolidating the fill, three small, “hot-spots” of contaminated soil located outside the five-acre elevated fill area.
- An impervious barrier wall to divert groundwater around the elevated fill area (*Benchmark and Geomatrix subsequently demonstrated that a diversion would not provide additional benefit and the USEPA eliminated this remediation component*.)
- A graded, topsoiled, and seeded, minimum one-foot clay cap on the elevated fill area.
- A barrier to prevent both contaminated groundwater leaching from out of, and creek water from infiltrating into, the capped elevated fill area.
- Collecting and treating leachate generated in the capped elevated fill area.
- Passive venting of landfill gas from the capped elevated fill area.
- Protecting Cattaraugus Creek from eroding into the remediated elevated fill area.
- Long-term operation and maintenance of the remedial measures according to a *Site Management Plan*.
- Ongoing air quality, and groundwater and Cattaraugus Creek water-quality monitoring.
- Evaluating site conditions on no greater than five-year intervals to verify that the remedy remains protective of the environment.
- Periodic reviews and reports to the USEPA of the site status and that the *Site Management Plan* was being followed, and annual certifications that the remedial measures (institutional and engineering controls) are intact and remain protective of health and the environment.

1.3.2 Site Management Plan (2010)

The site institutional controls, and the ongoing site operation/management and monitoring are governed by the *Site Management Plan* (October 2010.) The plan additionally ensures appropriate handling of subsurface soils during site redevelopment.

The Plan contains:

- An *Operation, Maintenance and Monitoring Plan* that sets forth procedures to be followed to operate the remediated Peter Cooper Site.
- A *Post-Remedial Groundwater and Surface Water Monitoring Plan* that sets forth the required ongoing water quality sampling and analytical requirements and procedures for the remediated Peter Cooper Site—including for the landfill leachate.
- A *Soil/Fill Management Plan* that specifies procedures for any repairs to the cap/cover over the five-acre elevated fill area, and the soil cover over the remainder of the inactive landfill area and eastern former manufacturing plant area.
- The *Environmental Easement and Deed Restrictions* that control the current and future use of the site in order to protect human health and the environment.

See the October 2010 SMP for the precise requirements of each component above.

1.4 Actions Taken to Facilitate the Remedial Program

1.4.1 Reuse Assessment (2002)

In 2001, the Village commissioned the SUNY Buffalo Center for Integrated Waste Management to evaluate reuse potentials for the Peter Cooper Site. Based on community involvement SUNY Buffalo identified that the best use of the property would be a multi-use public facility and it recommended the name "Zoar Valley Gateway" due to its locational setting. The *Reuse Assessment and Conceptual Plan for the Peter Cooper Gowanda Superfund Site* (December 2002) envisioned a redevelopment strategy that encompassed a range of possible components:

- Walking/jogging/biking trails.
- Fishing/small boat access to Cattaraugus Creek.
- Multi-use lodge and picnic/playground areas.
- Camping.
- Multi-use sport fields.
- A multi-use skate/skateboard park/winter skating rink.
- A refreshment and washroom facility.
- Interpretive signage.
- Waterfront-related commercial use.

1.4.2 Agreement and Order on Consent (2008)

The Village, GARC, and USEPA entered into an agreement in November 2008 that provided for the Village and GARC to jointly and severally be responsible for operating the site once the PRPs completed the remediation.

The key points of the *Order on Consent* were that (subject to the necessary actions and agreements by the PRPs):

- GARC would acquire the Peter Cooper site (except for the NYSEG portion.)
- The Village would accept the landfill leachate for treatment at its WWTP and that the Village/GARC will:
- Cooperate with the PRPs to facilitate the site remediation.
- Preserve the site forever as open space, except for development associated with the park.
- Operate the remediated site according to the *Site Management Plan*.
- Abide by and enforce the Site Institutional Controls.
- Submit periodic reports to the USEPA, to include:
  - Significant developments during the reporting period,
  - Actions completed and any problems encountered,
  - Analytical data received during the reporting period, and
  - Developments anticipated for the next reporting period (this *Periodic Review Report* was prepared to satisfy that requirement.)

1.4.3 Site Agreement and Subsequent O&M Funding (2009)

Consistent with the desire to redevelop the site, the Village, GARC, and thirteen PRPs entered into a February 2009 *Site Agreement,* after which the Village and GARC undertook most of the operation, maintenance, and monitoring activities that are necessary to implement the *Site Management Plan*. Under the agreement, the Village also provided utility service to operate the site, and issued a *Significant Industrial User Discharge Permit* to the PRPs and began treating landfill leachate at its WWTP. In exchange, the O&M expenses were reimbursed to the Village/GARC under a Trust Fund arrangement defined by the *Site Agreement* and was funded by the PRPs. The PRPs retained the responsibility for groundwater and creek water quality monitoring and reporting.

The *Site Agreement* further established that the PRPs would provide funding and other non-remedial site enhancements to assist in redeveloping the remediated site for public use consistent with the *ROD*. The agreement absolves the PRPs from future responsibility of the operation of or future costs associated with the redeveloped site (outside the remediated landfill area,) However, consistent with the February 2009 *Consent Decree* and September 2008 *Agreement and Order on Consent*, the PRPs retained the responsibility for the existing contamination and to complete the remediation, and for future performance of the remedial measures that were installed pursuant to the September 2005 *ROD,* February 2009 *Consent Decree*, 2009 *Remedial Design Work Plan*, and the remedial design.

Non-remedial enhancements that the PRPs funded or undertook to facilitate site redevelopment included:

- Removing and consolidating into the elevated fill area, certain non-hazardous C&D waste (demolished building remains and foundations, debris, etc.) from the former manufacturing plant area.
- Installing two uncontaminated, underground-utility corridors to be used for future service to the redeveloped site (Zoar Valley Gateway Park.)
- Cover material, and topsoil and seed for an 18-inch cap over building foundations and concrete slabs remaining in the former manufacturing area.
- Grading of the elevated fill area to facilitate site redevelopment plans, including a level area on the creek side of the landfill that is suitable for a future walking/bike path.

In June 2009, the eastern ~26.4-acre parcel was transferred to GARC—the entity who would facilitate redeveloping the remediated Peter Cooper Superfund Site into the Zoar Valley Gateway Park.

During the first five years after the remediation was completed, the Village/GARC undertook site operations except for the surface water and groundwater sampling and analytical analysis (which remained the PRPs' responsibility.) After five years, the *Site Agreement* provided for the Village/GARC to assume all future "ordinary and necessary operation, maintenance and monitoring" for the remaining 25-years of site operation (2016-. The future costs for such are to be funded by a one-time payment by the PRPs, based upon a review of the costs during the first five years. As of the date of this *PRR*, the parties are in the process of negotiating that one-time funding. This is separate from the Financial Assurance agreement that the PRPs have with the USEPA for future responsibility of performance of the Remedial Measures.

1.4.4 Environmental Easement and Deed Restrictions (2009)

In June 2009, the then-owner of the eastern ~23.4-acre parcel and all parties to the remediation granted an Environmental Protection Easement to the United States and New York State, and placed certain deed restrictions on the property that collectively control and restrict the future use of the Peter Cooper site.

These represent the Institutional Controls of the Remedial Measures (see the June 2009 *Environmental Easement* for the particulars of the requirements and restrictions.)

1.5 Prior Additions to, Modifications of, or Deviations from the Original Remedial Program

A September 2010 *Remedial Action Report* details the construction and actions that were completed to implement the Remedial Program described in the September 2005 *Record of Decision* and 2009 *Consent Decree and 2009 Remedial Design Work Plan.*

The 2010 *RAR* documented that there were two modifications to the original Program:

- The USEPA requirement in the 2005 ROD to install an Engineering Control consisting of an up-gradient groundwater diversion was subsequently removed from the required Remedial Measures.
- An Engineering Control consisting of a hydrogen peroxide pretreatment system to control hydrogen sulfide in the leachate discharged to the Village sewer system was installed in the pretreatment/pump-station-control building.

The completed Remedial Measures resulted in no other additions to, modifications of, or deviations from the original Remedial Program.

Subsequent to installing and start up of the constructed Remedial Measures, the following modifications have been made:

- The site semiannual water quality sampling, analysis, and reporting had been revised to annual sampling/reporting.
- Effective January 1, 2013, the schedule for sampling/analysis of the landfill leachate was modified from the initial *Significant Industrial User Discharge Permit* (See Appendix F.)

1.6 CERCLA Status of the Site

The first of the USEPA required five-year review of the site performance was published in April 2014, and found that the Remedy was protective of human health and the environment. The second USEPA review is due before April 2020.

The USEPA is currently in the process of removing the Peter Cooper Superfund Site from the *National Priorities List* with the concurrence of the NYSDEC, because it has determined that—other than continued site operation and maintenance, monitoring, and five-year reviews—all appropriate response actions under CERCLA have been completed. The proposed delisting is effective September 30, 2019, and the public comment period for the action ended August 29, 2019 (see Appendix G.)

II PERFORMANCE of the REMEDIAL MEASURES

2.1 Compliance With and Performance of the Institutional Controls

The Village and GARC continue to abide by and enforce the 2009 Environmental Easement and Deed Restrictions. Therefore, the Institutional Controls remain in place and are continuing to be protective of human health and the environment.

2.2 Status of and Compliance with the Site Management Plan

The 2010 O&MM Plan is in force for the site and is being followed by the Village and GARC. The revisions to the schedule for water quality monitoring, leachate monitoring, and periodic site reports that are described in Section 1.5 are essentially de facto revisions to the SMP.

2.2.1 Site Inspections, Compliance Issues, and Corrective Actions

Benchmark, the PRPs' environmental consultant, inspected the Peter Cooper Site during the October 2018 annual water quality sampling event (see the site inspection results attached in Appendix A.)

Additionally the site was inspected for this PRR on April 29, 2019 (see the inspection report in Appendix B.) The site was in substantial compliance with the *Site Management Plan*; however, the inspection identified these four issues to be addressed:

1. The protective steel casing on MW-2S(R) was discovered to be unlocked and the plug missing on the PVC riser. The MW was secured while on site.
2. Mature vegetation (various size trees) were observed rooted into the creek bank rip-rap protection that was installed in 2009.
3. Truck or ATV tracks were observed on the remediated landfill cap/cover with water ponding in the resulting ruts in certain locations (see map and photos, Appendix B.)
4. The pump station control alarm cell antenna and cable are exposed and in a location susceptible to vandalism.

Corrective Actions Undertaken

1. (Item 1 above) - The MW-2S(R) was secured while on site (see inspection report, Appendix B.)
2. (Item 2 above) - GARC has corrected this and arranged to have the rooted trees on the rip-rap removed (see Certification, Appendix B.) Future annual inspections will identify any future maintenance that is needed.
3. (Item 3 above) - GARC has corrected this and arranged to have the ruts filled according to the *Site Management Plan* (see Certification, Appendix B.)

Recommendations

1. (Item 4 above) - Arrange for the pump station alarm cellular service provider to move the antenna to the pretreatment station roof and encase the cable in conduit.

2.2.2 Leachate Collection and Compliance with the SIU Discharge Permit

The Village WWTP continues to treat the landfill leachate under the PRPs' Significant Industrial User Discharge Permit, as modified (see Appendix F.) The landfill generated a total 3,235,085 gallons of leachate during 2018, or on average 3,514 gallons per day (ranging from a low of 2,141 gpd to a high of 19,085 gpd.)

The permit calls for sampling annual water quality parameters in January and semiannual parameters in January and June. The 2018 sampling/analysis was instead in May and September (see Appendix D for the analytical reports.)

The analytical results of the leachate samples shows that the PRPs' are in compliance with the SIU Discharge permit, but the Village need to be more vigilant in meeting the sampling dates.

2.2.3 Annual O&M Cost to the Village

The total annual operation, maintenance, and monitoring costs to the Village during the CY 2018 reporting period were $7,194.13 (see Appendix E for the breakdown.)

2.3 Status and Performance of the Engineering Controls

Based on inspections of the site and evaluating the water quality monitoring during 2018 and upon reviewing all information available:

- The Engineering Controls are in place and performing as intended.
- All indications are that the Engineering Controls remain protective of human health and the environment.

2.4 Recommendations for Changes to the Remedy or Management of the Site for the Protection of Human Health and the Environment

After inspection of the site and investigating the operation and maintenance and monitoring during 2018, and based on reviewing all available information:

- **No modifications to the Remedy or to the site management are recommended.**

III STATUS of SUPERFUND SITE REDEVELOPMENT

3.1 Redevelopment Completed During Current Reporting Period

The annual *Summary Report; 2016—2017* (April 2018) for the Peter Cooper Site identified the redevelopment activities and park amenities that were installed during 2016-2017, and the anticipated redevelopment activities for year 2018 and beyond (see report excerpts, Appendix H.) No additional development has occurred at the Zoar Valley Gateway Park during the reporting year 2018, and future development is pending additional grant and other funding.

3.2 Scheduled Future Redevelopment Activities

The USEPA delisting of the Peter Cooper Site from the *National Priorities List* will assist GARC in securing future funding for the park amenities such as those listed in Appendix H.

TABLES

1 Analytical Results of Site Groundwater and Surface Water Quality Sampling

Benchmark Environmental Engineering & Science, PLLC

Note:
Data source: Benchmark Environmental;
Post-Remedial Groundwater Monitoring & Maintenance Summary Report
2018 Annual Event (April 2018); Table 4

HISTORICAL SUMMARY OF GROUNDWATER ANALYTICAL DATA

Peter Cooper Gowanda Site

Gowanda, NY

PARAMETER[1]	GWQS[2] Class "GA" Groundwater Standard	MW-1SR				MW-5S									
		10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18
Volatile Organic Compounds (VOCs) - (ug/L)															
1,1,1-Trichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	**50**	ND	ND	ND	1.5 J	ND	ND	ND	ND		ND	ND	ND	ND	ND
Acetone	**50**	ND	ND	38	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	**--**	ND	ND	0.49 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	**7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND	ND
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (mg/L)															
Arsenic - Total	**0.025**	ND	ND	0.018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium - Total	**0.05**	ND	ND	**0.092**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron - Total[4]	**0.3**	NA	NA	NA	ND	**24.7**	ND	ND	**15.1**	NA	NA	NA	NA	NA	ND
Manganese - Total	**0.3**	**2.0**	**2.8**	**5.2**	**6.3**	**0.79**	**1**	**0.96 B7**	**1.2**	**0.88**	**0.79**	**1.3**	**1.2**	**1.3**	**0.93**
Soluble Metals (mg/L)															
Manganese - Dissolved	**0.3**	0.17	NA	0.17	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry (mg/L)															
Ammonia (as N)	**2**	0.26	1.5	1.7	0.97	**3.5**	**10.2**	**10.2**	**9.3**	**9.4**	**3.5**	**10.8**	**7.8**	**11**	**7.5**
Chromium (hexavalent)	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloride	**250**	8.5	7	6.5	8	6.4	8.7	5.2	3.1	3.6	2.8	8.3	9.6	8.3	11.5
Hardness as calcium carbonate	**--**	470	396	425	416	940	900	1300	610	920	1100	880	620	1300	1260
Field Measurements (Units as Indicated)															
Sample Information		*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*
pH (units)	**6.5 - 8.5**	6.64	6.91	6.99	6.88	7.1	6.85	6.57	6.74	6.81	7.01	6.77	6.78	6.77	6.89
Temperature (oC)	**--**	14.9	14.1	16.5	18.7	18.9	10.9	12.8	12.8	13.6	17.1	13.6	14.3	15.3	18.4
Specific Conductance (uS)	**--**	815.4	724.7	749.9	816	1742	1592	2015	1135	1712	1773	1657	1239	2046	2483
Turbidity	**--**	18.7	43.9	>1000	8	17	8.49	8.13	30	20.2	14.9	17.3	18.9	4.17	12
ORP (mV)	**--**	19	-15	-72	-54	-130	-55	-80	-62	-30	-66	-72	-52	-145	-140

PARAMETER[1]	MW-7S										MW-2SR [3]							
	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/24/13	10/30/15	11/16/16
Volatile Organic Compounds (VOCs) - (ug/L)																		
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Acetone	ND	ND	7.6 J	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Total Metals (mg/L)																		
Arsenic - Total	0.014	0.02	0.11	0.015	ND	**0.043**	ND	**0.028**	Dry	**0.031**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chromium - Total	ND	ND	ND	ND	ND	0.023	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Iron - Total[4]	**8.6**	ND	ND	**7.3**	NA	NA	NA	NA	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Manganese - Total	**0.71**	**1.5**	**0.9**	**1.8**	**1.2**	**4**	**0.66**	**2.2**	Dry	**1.3**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Soluble Metals (mg/L)																		
Manganese - Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
General Chemistry (mg/L)																		
Ammonia (as N)	**10.8**	**13.9**	**20.3**	**17.7**	**18.1**	**11.7**	**3.7**	**23**	Dry	**14.3**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chromium (hexavalent)	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chloride	19.1	33.4	42.4	39.5	35.5	25.3	32.5	65.5	Dry	29.8	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Hardness as calcium carbonate	473	710	530	780	680	NA	340	NA	Dry	456	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Field Measurements (Units as Indicated)																		
Sample Information	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Dry*	*Final*	*Dry*	*Dry*	Dry	Dry	Dry	Dry	Dry	Dry
pH (units)	7.01	6.94	(8)	7.03	6.69	6.8	6.4	NA	Dry	7.13	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Temperature (oC)	17.3	9.0	(8)	8.9	12.5	19.9	13.5	NA	Dry	18.3	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Specific Conductance (uS)	992.1	1349	(8)	1547	1413	2153	856.2	NA	Dry	1228	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Turbidity	12.1	1.69	(8)	10	9.82	100	41.5	NA	Dry	21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
ORP (mV)	-95	-31	(8)	57	92	80	37	NA	Dry	-86	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry

PARAMETER[1]	MWFP-2S										MWFP-3S									
	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18
Volatile Organic Compounds (VOCs) - (ug/L)																				
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1	1.2	1.3	2.8	3.2	2.1	3.5	1.3	1.3	2.9
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.91 J	ND	0.82 J	ND	ND	ND	0.4 J	1.2	2.5	1.7 J
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3 J	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.44 J	ND	ND	0.73 J	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	0.44 J	ND	0.69 J	0.73J	0.45 J	2.6 J	0.63 J	ND	1.3 J
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	0.91 J	2.8	ND	ND	1.6	1.2	**5.4**	**6.5**	**8.1**
Methylene chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	0.77 J	ND	ND	**7.9**	**6.9**	3.3	**13**	**12**	**10**	**9.5**	**5.9**	3.8	**8.5**
trans-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.2	2.4	2.3	1.8	2.7	1.9	3.8	2.3	1.7	3.2
Total Metals (mg/L)																				
Arsenic - Total	**0.026**	0.025	0.018	0.015	0.014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium - Total	0.018	0.041	**0.056**	0.01	0.0092	0.0099	0.038	0.049	**0.054**	0.02	0.011	ND	ND	ND	ND	ND	ND	ND	ND	0.0065
Iron - Total[4]	**8.0**	ND	ND	**5.2**	NA	NA	NA	NA	NA	NA	**5.9**	ND	ND	**1.5**	NA	NA	NA	NA	NA	ND
Manganese - Total	**0.5**	**0.36**	**0.43 B7**	**0.57**	**0.44**	**0.42**	0.3	**0.5**	**0.4**	**0.37**	**0.64**	0.069	**2.5 B7**	0.15	0.25	**1.2**	0.28	**0.56**	**5.2**	**6.6**
Soluble Metals (mg/L)																				
Manganese - Dissolved	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry (mg/L)																				
Ammonia (as N)	**3.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (hexavalent)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.021 H
Chloride	22.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness as calcium carbonate	873	NA	NA	NA	NA	NA	NA	NA	NA	NA	690	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Measurements (Units as Indicated)																				
Sample Information	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*
pH (units)	7.55	7.24	7.42	7.1	7.46	7.29	7.14	7.26	7.32	7.13	7.24	7.1	6.72	7.22	6.68	7.1	6.69	6.68	6.72	6.75
Temperature (oC)	17.3	10.7	13.7	11.5	14.9	17.5	12.6	14.2	15	19.2	16.7	8.5	14.6	9.6	13.8	14.6	13.3	14.2	15.2	17.7
Specific Conductance (uS)	1212	1207	1192	1220	1053	970	1210	1224	982.8	1121	1290	550.9	1881	771	842.1	1187	744.9	1002	1487	1850
Turbidity	47	8.14	6.14	3.33	20.7	3.94	8.42	22.5	10.3	4	25.5	8.78	7.46	7.5	18.5	13.9	9.91	5.79	2.7	16
ORP (mV)	-145	-27	42	-76	-42	-142	-30	-59	-103	-95	-40	35	32	429	106	132	98	43	7	-61

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - GA Class (TOGS 1.1.1)
3. MW-2SR dry, no sample collected.
4. Iron samples were inadvertently collected during the events prior to June 2013; iron is not a required analyte per the approved post-remedial groundwater monitoring plan.

Definitions:
ND = Parameter not detected above laboratory detection limit.
NA = not analyzed for these parameters
"--" = No value available for the parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B7 = Detected in method blank at or above method reporting limit. Concentration was 10 times above the concentraion found in the blank.
H= Sample analyzed outside of laboratory method holding time.
Bold = Result exceeds GWQS.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

HISTORICAL SUMMARY OF SURFACE WATER ANALYTICAL DATA
(CONTINUED)

Peter Cooper Gowanda Site
Gowanda, NY

Note:
Data source: Benchmark Environmental;
Post-Remedial Groundwater Monitoring & Maintenance Summary Report 2018 Annual Event (April 2018); Table 4

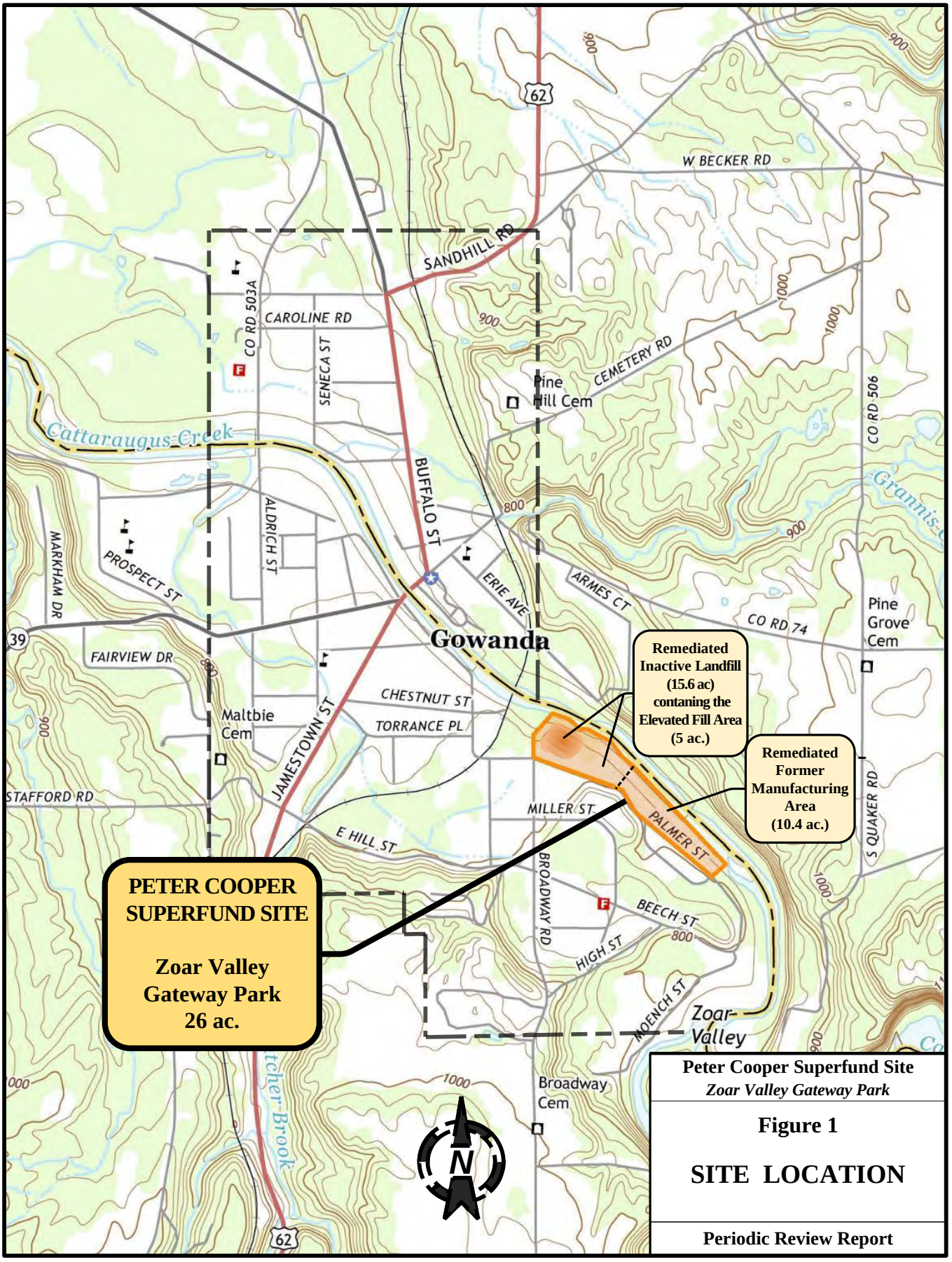
PARAMETER[1]	GWQS[2,] Class "C" (T) Surface Water Standard	Sample Location																														
		SW-1										SW-2										SW-3										
		6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18
Volatile Organic Compounds (VOCs) - (ug/L)																																
1,1,1-Trichloroethane	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	--	3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (mg/L)																																
Arsenic - Total	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium - Total	Note 3	0.016	ND	ND	0.0044	ND	ND	ND	ND	ND	ND	0.017	ND	ND	ND	ND	ND	0.0042	ND	ND	ND	0.024	ND	ND	ND	ND	ND	0.0004	ND	ND	ND
Hexanalent Chromium - Total	0.05	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron - Total	0.3	**19.5**	ND	ND	**1.1**	NA	NA	NA	NA	NA	NA	**22**	ND	ND	**0.95**	NA	NA	NA	NA	NA	NA	**32.1**	ND	ND	**1**	--	--	NA	NA	NA	NA
Manganese - Total	0.3	**0.35**	0.029	0.032	0.044	0.01	0.031	0.031	0.018	0.015	0.052	**0.44**	0.027	0.027	0.033	0.0078	0.017	0.091	0.017	0.011	0.051	0.62	0.27	0.024	0.033	0.025	0.017	0.18	0.017	0.011	0.046
Dissolved Metals (mg/L)																																
Iron - Soluble		ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese - Soluble	--	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	NA	0.014	NA	NA	0.0035
General Chemistry (mg/L)																																
Ammonia (as N)	0.035 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.3**	ND	ND	ND	ND	0.034	ND	ND	0.032	ND	**0.13**	ND	ND	**0.047**
Chloride	--	22	23.7	30.2	30.2	31.3	33.7	22.1	33.4	30	20.4	21.5	23.5	29.9	29.3	31.4	33.4	20	33.1	29.9	20.3	24.5	22.7	29.7	29.4	39.3	33.2	25.2	32.8	30.1	20
Hardness as calcium carbonate	--	139	140	160	144	172	180	136	184	176	152	189	150	164	140	180	180	120	196	176	148	194	140	160	142	132	180	152	176	174	160
Field Measurements (Units as Indicated)																																
Sample Information		*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*
pH (units)	6.5 - 8.5	8.17	8.08	**8.75**	7.93	8.24	8.21	7.85	8.08	8.46	8.67	8.16	8.29	8.44	7.21	8.54	8.32	7.96	7.82	8.32	8.45	8.51	7.91	8.53	8.14	8.41	8.42	7.12	7.95	8.4	8.71
Temperature (oC)	--	26.2	4.1	21.5	3.3	23.5	24.3	10.2	6.3	10.1	21	23	3.3	22.8	2.6	24.8	23.8	10.1	6.3	10.5	23	23.9	3.8	23.7	2.7	25.9	23.9	10.2	6.1	13.9	21.8
Specific Conductance (uS)	--	385.9	326.4	408.6	380	418.2	440	326.1	430.7	412.3	516	316.7	328.7	405.8	385	416.2	421	287.5	427.1	438.7	445	312.6	330	402.9	347	464.1	500	373	427.7	410.9	425.0
Turbidity	--	405	21.6	41.9	19.7	21.3	10	117	6.14	6.04	69	626	23.8	31.1	23	27.4	10.2	140	2.99	5.9	73	934	20.6	32	34	24.3	11	116	4.86	6.96	57.00
ORP (mV)	--	-105	7	2	103	80	58	11	-20	-38	+37	-75	16	18	117	-14	107	77	79	-4	-15	43	25	50	104	37	92	35	46	-131	-16

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water-Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS1.1.1)- Class C (T).
3. Class C Standard (ug/l) caculated as: (0.86) exp (0.819 [ln ppm hardness] + 0.6848)
4. Value is pH and temperature dependent-per TOGS 1.1.1 lookup table.

Definitions:
ND = Parameter not detected above laboratory detection limit.
NA = not analyzed for these parameters
NS = not sampled
"--" = No value available for the parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
Bold = Result exceeds GWQS.

FIGURES

1 Site Location


PETER COOPER SUPERFUND SITE
Zoar Valley Gateway Park 26 ac.
Remediated Inactive Landfill (15.6 ac) contaning the Elevated Fill Area (5 ac.)
Remediated Former Manufacturing Area (10.4 ac.)
Gowanda
Maltbie Cem
Pine Hill Cem
Pine Grove Cem
Broadway Cem
Zoar Valley
Cattaraugus Creek
Peter Cooper Superfund Site
Zoar Valley Gateway Park
Figure 1
SITE LOCATION
Periodic Review Report

APPENDIX A

2018 Water Quality Sampling and Analytical Results

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
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December 17, 2018

Ms. Sherrel Henry
Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway – 20th Floor
New York, New York 10007-1866

Re: Peter Cooper Landfill Site, Gowanda, NY
Post-Remedial Groundwater Monitoring & Maintenance Summary Report
2018 Annual Event

Dear Ms. Henry:

On behalf of the cooperating Potentially Responsible Parties (cPRPs) for the above-referenced site, Benchmark Environmental Engineering & Science, PLLC (Benchmark) has prepared this letter report to transmit the results of the annual post-remedial groundwater monitoring event at the Peter Cooper Landfill Site in Gowanda, New York. A monitoring and maintenance summary for the engineering controls (landfill cover system and creek bank erosion controls) is also included in this report. The work was performed in accordance with our approved (October 2010) Post-Remedial Operation, Maintenance and Monitoring (OM&M) Plan. Groundwater and surface water monitoring requirements are presented in Table 1.

FIELD SAMPLING PROCEDURE

On October 10, 2018, Benchmark staff collected a round of static water level measurements from the seven monitoring wells shown on Figures 1&2; measurements and groundwater elevations are summarized on Table 2. Groundwater samples were collected from on-site monitoring wells MW-1SR, MW-5S, MW-7S MWFP-2S, and MWFP-3S. At the USEPA's request (per the 2015 CERCLA 5 Year review report) samples were collected from MW-1SR in lieu of MW-2SR due to continued dry conditions at the MW-2SR location. Surface water samples were collected from SW-1, SW-2[1], and SW-3.

The monitoring wells were sampled using a Mini-Typhoon® submersible pump and dedicated tubing following low-flow groundwater purging and sampling procedures, except for MW-1SR and MW-7S which was sampled using a peristaltic pump with dedicated tubing. Field measurements for pH, Eh, specific conductance, temperature, turbidity, and visual/ olfactory observations were recorded and monitored during purging. Purging was considered complete when pH, specific conductivity, and temperature stabilized; and the turbidity

[1] The CERCLA 5 Year Review Report also recommended relocation of SW-2 further downstream. However, the current location is designed to distinguish ammonia levels between the former manufacturing plant area and the inactive landfill area of the site. Accordingly, it was not relocated.

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measured below or stabilized above 50 NTU. Stability is defined as the variation between field measurements of 10 percent or less with no overall upward or downward trend in the measurements. Once the field parameters stabilized, groundwater samples were collected in laboratory-supplied pre-preserved sample bottles. Immediately following groundwater sample collection, field measurements for pH, specific conductance, temperature, turbidity, and Eh were recorded. The submersible pump was decontaminated using Alconox and water following sample collection activities at each well.

The surface water samples from SW-1, SW-2, and SW-3 were collected by slowly immersing a sample jar attached to a dipper handle into the water. The contents of the collection jar were then transferred to laboratory-supplied pre-preserved bottles for analysis. Field measurements for pH, Eh, specific conductance, temperature, turbidity, and visual/olfactory observations were also recorded.

Attachment 1 includes sample collection logs. All water samples were cooled to 4^{o}C in the field and transported, under chain-of-custody command, to Test America Laboratories, Inc. in Amherst, NY for analysis per Table 1.

ANALYTICAL RESULTS

Attachment 2 includes the analytical data package for the October 10, 2018 sampling event. Compounds detected above method detection limits are shown on Table 3 with their associated sample concentrations. New York State Class "GA" Groundwater Quality Standards and Guidance Values and Class "C(T)" surface water quality standards (collectively referred to herein as the "standards") per NY State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 are presented for comparison. Concentrations exceeding the respective standards are highlighted.

As indicated on Table 3, all the monitored parameters were reported as non-detect or below the ground water quality standard at all the groundwater sampling locations with few minor exceptions where slight exceedances of the standards were reported. These were limited to:

- cis-1,2-Dichloroethene and Tetrachloroethene at MWFP-3S.
- Total Arsenic at MW-7S.
- Ammonia (as N) at MW-5S, MW-7S and to a lesser extent at SW-3.
- Total manganese at MW-1SR (upgradient well), MW-5S, MW-7S, MWFP-2S, and MWFP-3S.

DATA QUALITY

Site-specific quality control (QC) sampling during this event included the collection of one blind duplicate sample collected from SW-2 for VOC and total metal analyses, and one matrix spike/matrix spike duplicate (MS/MSD) sample collected from SW-1 for VOC and

total metal analyses. Blind duplicate data was consistent with primary sample data. The MS/MSD laboratory recoveries were slightly outside (above) acceptable limits for VOC parameters, indicating potential positive analytical bias. However, based upon the overall consistency of the VOC sample results with prior events any such bias does not appear significant. Additionally, the specified holding times for hexavalent chromium at MWFP-3S were exceeded by the laboratory during sample preparation or analysis. However, the consistent historical absence of hexavalent chromium at this location indicated that the holding time exceedance did not bias the subject results.

GROUNDWATER ELEVATION DATA

Groundwater monitoring included a round of static water level measurements from seven monitoring wells across the site (see Table 2). An isopotential map representing the shallow groundwater was prepared from the October 10, 2018 depth-to-groundwater measurements and is presented as Figure 3. Based on those measurements, shallow groundwater migrates north westerly towards Cattaraugus Creek, which is consistent with observations recorded during the site Remedial Investigation.

ELEVATED FILL SUBAREA AND BANK PROTECTION COVER MONITORING

A post remedial site inspection of the Elevated Fill Subarea was performed during the groundwater monitoring event. The inspection report indicated no irregularities or changes to the property access or security. The gas-vent system is intact and operational with no objectionable odors noted. The soil cover system and vegetative cover remain intact with no evidence of erosion, burrowing, vegetative stress, etc. Similarly, riprap erosion control remains in place with no visual or olfactory evidence of leachate breakout.

LEACHATE/GROUNDWATER COLLECTION AND PRETREATMENT SYSTEM

The leachate and groundwater collection and pretreatment system are monitored by the Gowanda Area Redevelopment Corporation (GARC), which is the current property owner. Based on discussions with GARC personnel, we understand that all effluent samples collected per the Significant Industrial User (SIU) discharge permit have been conformant with permit limits since the collection system was started up in 2010. In addition, pretreatment with oxidant has not been required to achieve sulfide discharge limits.

HISTORICAL DATA

Table 4 presents groundwater monitoring results for past monitoring events (i.e. July 2011-October 2018), with concentrations for several key parameters, including VOCs (MWFP-2S, MWFP-3S), ammonia, total chromium, and manganese. In general, the data indicate minor/seasonal changes in concentration for the monitored parameters at each of the sample locations. with no upward trending.

CONCLUSIONS AND RECOMMENDATIONS

The data indicate few exceedances of the standards with no adverse impact from the site to Cattaraugus Creek. The remedy is functioning as intended and remains protective of human health and the environment.

At this time it is recommended that groundwater monitoring be performed on a rotational basis (one every 15 months) to allow for evaluation of seasonal variability in the data. Inspections will continue to be performed annually to verify the integrity of the cell cover and gas venting system.

Sincerely,
Benchmark Environmental Engineering & Science, PLLC

Thomas H. Forbes, P.E.
Principal Engineer

Att.

Cc: W. D'Angelo
S. Davis
T. Blazicek
R. Biltekoff
M. Moore (NYSDEC)
M. Hutchinson (GARC)

File: 0021-010-500

TABLES

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 1

GROUNDWATER & SURFACE WATER MONITORING PLAN

Peter Cooper Gowanda Site
Gowanda, New York

Sample Location	Est. Number of Samples Per Event	Parameters	Frequency
Upgradient Monitoring Well			
MW-7S	1	TCL VOCs, Total Metals[2] Field Measurements[3] Water Quality Parameters[4]	Annually
FMPA Monitoring Network Wells (water level and quality)			
MWFP-2S	1	TCL VOCs (chlorinated aliphatics only) Total Metals[2] Field Measurements[3]	Annually
MWFP-3S	1		
ILA Monitoring Network Wells (water level and quality)			
MW-1SR	1	TCL VOCs Total Metals[2] Field Measurements[3] Water Quality Parameters[4]	Annually
MW-2SR[5]	1		
MW-5S	1		
QA/QC Samples [1]			
Trip Blank	1	TCL VOCs	Annually
Blind Duplicate	1	TCL VOCs Total Metals[2]	Annually
Matrix Spike	1		
Matrix Spike Duplicate	1		
Monitoring Network Surface Water			
SW-1	1	TCL VOCs Total Metals[2] Field Measurements[3] Water Quality Parameters[4]	Annually
SW-2	1		
SW-3	1		
Monitoring Network Wells (water level only)			
MW-6	--	--	Annually

Notes:

1. QA/QC samples will be collected at a frequency of 1 per 20 for each matrix.
2. Total metals include: arsenic, chromium, hexavalent chromium, manganese; if field measured turbidity is greater than 50 NTU, dissolved metals will also be collected.
3. Field measurements include: pH, temperature, specific conductance, turbidity, Eh
4. Water quality parameters include: ammonia, hardness, chloride, total sulfide.
5. Due to persistent dry conditions at MW-2SR, samples have instead been collected from MW-1SR per USEPA request in the 2015 fi

Acronyms:

FMPA = Former Manufacturing Plant Area of the Site
ILA = Inactive Landfill Area of the Site
TCL = Target Compound List
VOCs = Volatile Organic Compounds

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TABLE 2

SUMMARY OF GROUNDWATER ELEVATIONS

October 2018 Annual Monitoring Event
Peter Cooper Gowanda Site
Gowanda, New York

Location	TOR Elevation (fmsl)	10/10/18	
		DTW (fbTOR)	GWE (fmsl)
MW-7S	787.77	10.48	777.29
MWFP-2S	786.00	9.73	776.27
MWFP-3S	780.69	9.00	771.69
MW-2SR	770.93	dry	DRY
MW-5S	781.16	12.65	768.51
MW-6	787.87	16.10	771.77
MW-1SR	779.62	8.05	771.57

Notes:
1. DTW = depth to water
2. fbTOR = feet below top of riser
3. fmsl = feet above mean sea level
4. GWE = groundwater elevation
5. TOR = top of riser

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TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL DATA
October 2018 Annual Sampling Event
Peter Cooper Gowanda Site
Gowanda, NY

PARAMETER[1]	GWQS[2,3] Class "GA" Groundwater Standard	GWQS[2,3] Class "C" (T) Surface Water Standard	Sample Location											
			MW-1SR	MW-5S	MW-7S	MW-2SR [4]	MWFP-2S	MWFP-3S	SW-1	SW-2	SW-3	Blind Dup [5]
			10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018	10/10/2018
Volatile Organic Compounds (VOCs) - (ug/L)												
1,1,1-Trichloroethane	**5**	**--**	ND	ND	ND	DRY	ND	2.9	ND	ND	ND	ND
1,1-Dichloroethane	**5**	**--**	ND	ND	ND	DRY	ND	1.7 J	ND	ND	ND	ND
2-Butanone (MEK)	**50**	**50**	1.5 J	ND	ND	DRY	ND	ND	ND	ND	ND	ND
Acetone	**50**	**--**	3 J	ND	ND	DRY	ND	ND	ND	ND	ND	ND
Chloroform	**7**	**--**	ND	ND	ND	DRY	ND	1.3 J	ND	ND	ND	ND
cis-1,2-Dichloroethene	**5**	**--**	ND	ND	ND	DRY	ND	**8.1**	ND	ND	ND	ND
Methylene chloride	**5**		ND	1.2 J	ND	DRY	ND	1.4 J	ND	ND	ND	ND
Tetrachloroethene	**5**	**1**	ND	ND	ND	DRY	ND	**8.5**	ND	ND	ND	ND
Trichloroethene	**5**	**40**	ND	ND	ND	DRY	ND	3.2	ND	ND	ND	ND
Total Metals (mg/L)												
Arsenic - Total	**0.025**	**0.15**	ND	ND	**0.031**	DRY	ND	ND	ND	ND	ND	ND
Chromium - Total	**0.05**	**Note 6**	ND	ND	ND	DRY	0.02	0.0065	ND	ND	ND	ND
Chromium - Hexavalent	**0.05**	**0.011**	ND	ND	ND	DRY	ND	0.021 H	ND	ND	ND	ND
Manganese - Total	**0.3**	**0.3**	**6.2**	**0.93**	**1.3**	DRY	**0.37**	**6.6**	0.052	0.051	0.046	0.05
Soluble Metals (mg/L)												
Manganese - Dissolved	**0.3**	**0.3**	ND			DRY	ND	ND	ND	ND	0.0035	ND
General Chemistry (mg/L)												
Ammonia (as N)	**2**	**0.035** [7]	0.97	**7.5**	**14.3**	DRY	ND	ND	ND	ND	**0.047**	ND
Chloride	**250**	**--**	8	11.5	29.8	DRY	ND	ND	20.4	20.3	20	ND
Hardness as calcium carbonate	**--**	**--**	416	1260	456	DRY	ND	ND	152	148	160	ND
Field Measurements (Units as Indicated)												
Sample Information			*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Final*	DRY	*Initial*	*Final*	*Initial*	*Final*	*Initial*	*Initial*	*Initial*	*Initial*
pH (units)	**6.5 - 8.5**	**6.5 - 8.5**	6.74	6.88	6.73	6.89	6.88	7.13	DRY	7.05	7.12	6.76	6.75	8.67	8.45	8.71	8.45
Temperature (oC)	**--**	**--**	17.8	18.7	17.1	18.4	17.5	18.3	DRY	17.2	19.2	17.4	17.7	21	23	21.8	23
Specific Conductance (uS)	**--**	**--**	795	816	2492	2483	1228	1267	DRY	1141	1121	1531	1850	516	445	425	445
Turbidity (NTU)	**--**	**--**	10	8	33	12	31	21	DRY	12	4	45	16	69	73	57	73
ORP (mV)	**--**	**--**	-82	-54	-90	-140	-86	-86	DRY	-53	-95	-74	-61	+37	-15	-16	-15

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - GA Class (TOGS 1.1.1)
3. Values per NYSDEC Division of Water-Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitions (TOGS1.1.1)- Class C (T).
4. MW-2SR was not sampled as well was dry.
5. Blind Duplicate was collected from SW-2.
6. Class C Standard (ug/l) caculated as: (0.86) exp (0.819 [ln ppm hardness] + 0.6848)
7. Value is pH and temperature dependent-per TOGS 1.1.1 lookup table.

Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = not analyzed for these parameters
"--" = No value available for the parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
H= Sample analyzed outside of laboratory method holding time.
F1 = MS/MSD Recovery is outside acceptance limits.
F2= MS/MSD RPD exceeds control limits

Bold = Result exceeds GWQS.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 4

HISTORICAL SUMMARY OF GROUNDWATER ANALYTICAL DATA

Peter Cooper Gowanda Site
Gowanda, NY

PARAMETER[1]	GWQS[2] Class "GA" Groundwater Standard	MW-1SR				MW-5S										MW-7S										MW-2SR [3]									
		10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/24/13	10/30/15	11/16/16	10/27/17	10/10/18
Volatile Organic Compounds (VOCs) - (ug/L)																																			
1,1,1-Trichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
1,1-Dichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
1,1-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
2-Butanone (MEK)	**50**	ND	ND	ND	1.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Acetone	**50**	ND	ND	38	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.6 J	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Carbon disulfide	**--**	ND	ND	0.49 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Carbon tetrachloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chloroform	**7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
cis-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Methylene chloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.42 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Trichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Total Metals (mg/L)																																			
Arsenic - Total	**0.025**	ND	ND	0.018	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.014	0.02	0.11	0.015	ND	**0.043**	ND	**0.028**	Dry	**0.031**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chromium - Total	**0.05**	ND	ND	**0.092**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.023	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Iron - Total[4]	**0.3**	NA	NA	NA	ND	**24.7**	ND	ND	**15.1**	NA	NA	NA	NA	ND	8.6	ND	ND	**7.3**	NA	NA	NA	NA	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Manganese - Total	**0.3**	**2.0**	**2.8**	**5.2**	**6.3**	**0.79**	**1**	**0.96 B7**	**1.2**	**0.88**	**0.79**	**1.3**	**1.2**	**1.3**	**0.93**	**0.71**	**1.5**	**0.9**	**1.8**	**1.2**	**4**	**0.66**	**2.2**	Dry	**1.3**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Soluble Metals (mg/L)																																			
Manganese - Dissolved	**0.3**	0.17	NA	0.17	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
General Chemistry (mg/L)																																			
Ammonia (as N)	**2**	0.26	1.5	1.7	0.97	**3.5**	**10.2**	**10.2**	**9.3**	**9.4**	**3.5**	**10.8**	**7.8**	**11**	**7.5**	**10.8**	**13.9**	**20.3**	**17.7**	**18.1**	**11.7**	**3.7**	**23**	Dry	**14.3**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chromium (hexavalent)	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Dry	ND	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Chloride	**250**	8.5	7	6.5	8	6.4	8.7	5.2	3.1	3.6	2.8	8.3	9.6	8.3	1.5	19.1	33.4	42.4	39.5	35.5	25.3	32.5	65.5	NA	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Hardness as calcium carbonate	**--**	470	396	425	416	940	900	1300	610	920	1100	880	620	1300	1260	473	710	530	780	680	NA	340	NA	Dry	456	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Field Measurements (Units as Indicated)																																			
Sample Information		*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Dry*	*Final*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*
pH (units)	**6.5 - 8.5**	6.64	6.91	6.99	6.88	7.1	6.85	6.57	6.74	6.81	7.01	6.77	6.78	6.77	6.89	7.01	6.94	(8)	7.03	6.69	6.8	6.4	NA	Dry	7.13	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Temperature (oC)	**--**	14.9	14.1	16.5	18.7	18.9	10.9	12.8	12.8	13.6	17.1	13.6	14.3	15.3	18.4	17.3	9.0	(8)	8.9	12.5	19.9	13.5	NA	Dry	18.3	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Specific Conductance (uS)	**--**	815.4	724.7	749.9	816	1742	1592	2015	1135	1712	1773	1657	1239	2046	2483	992.1	1349	(8)	1547	1413	2153	856.2	NA	Dry	1228	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Turbidity	**--**	18.7	43.9	>1000	8	17	8.49	8.13	30	20.2	14.9	17.3	18.9	4.17	12	12.1	1.69	(8)	10	9.82	100	41.5	NA	Dry	21	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
ORP (mV)	**--**	19	-15	-72	-54	-130	-55	-80	-62	-30	-66	-72	-52	-145	-140	-95	-31	(8)	57	92	80	37	NA	Dry	-86	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry

PARAMETER[1]	GWQS[2] Class "GA" Groundwater Standard	MWFP-2S														MWFP-3S																			
		6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18
Volatile Organic Compounds (VOCs) - (ug/L)																																			
1,1,1-Trichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.1	1.2	1.3	2.8	3.2	2.1	3.5	1.3	1.3	2.9										
1,1-Dichloroethane	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.91 J	ND	0.82 J	ND	ND	ND	0.4 J	1.2	2.5	1.7 J										
1,1-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.3 J	ND	ND	ND										
2-Butanone (MEK)	**50**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND										
Acetone	**50**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND										
Carbon disulfide	**--**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND										
Carbon tetrachloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.44 J	ND	ND	0.73 J	ND	ND	ND										
Chloroform	**7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4	0.44 J	ND	0.69 J	0.73J	0.45 J	2.6 J	0.63 J	ND	1.3 J										
cis-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	0.91 J	2.8	ND	ND	1.6	1.2	**5.4**	**6.5**	**8.1**										
Methylene chloride	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4 J										
Tetrachloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	0.77 J	ND	**7.9**	**6.9**	3.3	**13**	**12**	**10**	**9.5**	**5.9**	3.8	**8.5**										
trans-1,2-Dichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.23 J	ND													
Trichloroethene	**5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.2	2.4	2.3	1.8	2.7	1.9	3.8	2.3	1.7	3.2										
Total Metals (mg/L)																																			
Arsenic - Total	**0.025**	**0.026**	0.025	0.018	0.015	0.014	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND										
Chromium - Total	**0.05**	0.018	0.041	**0.056**	0.01	0.0092	0.0099	0.038	0.049	**0.054**	0.02	0.011	ND	ND	ND	ND	ND	ND	ND	ND	0.0065										
Iron - Total[4]	**0.3**	**8.0**	ND	ND	**5.2**	NA	NA	NA	NA	NA	NA	**5.9**	ND	ND	**1.5**	NA	NA	NA	NA	NA	ND										
Manganese - Total	**0.3**	**0.5**	**0.36**	**0.43 B7**	**0.57**	**0.44**	**0.42**	0.3	**0.5**	**0.4**	**0.37**	**0.64**	0.069	**2.5 B7**	0.15	0.25	**1.2**	0.28	**0.56**	**5.2**	**6.6**										
Soluble Metals (mg/L)																																			
Manganese - Dissolved	**0.3**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA										
General Chemistry (mg/L)																																			
Ammonia (as N)	**2**	**3.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Chromium (hexavalent)	**0.05**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.021 H										
Chloride	**250**	22.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	38.7	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Hardness as calcium carbonate	**--**	873	NA	NA	NA	NA	NA	NA	NA	NA	NA	690	NA	NA	NA	NA	NA	NA	NA	NA	NA										
Field Measurements (Units as Indicated)																																			
Sample Information		*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*	*Final*										
pH (units)	**6.5 - 8.5**	7.55	7.24	7.42	7.1	7.46	7.29	7.14	7.26	7.32	7.13	7.24	7.1	6.72	7.22	6.68	7.1	6.69	6.68	6.72	6.75										
Temperature (oC)	**--**	17.3	10.7	13.7	11.5	14.9	17.5	12.6	14.2	15	19.2	16.7	8.5	14.6	9.6	13.8	14.6	13.3	14.2	15.2	17.7										
Specific Conductance (uS)	**--**	1212	1207	1192	1220	1053	970	1210	1224	982.8	1121	1290	550.9	1881	771	842.1	1187	744.9	1002	1487	1850										
Turbidity	**--**	47	8.14	6.14	3.33	20.7	3.94	8.42	22.5	10.3	4	25.5	8.78	7.46	7.5	18.5	13.9	9.91	5.79	2.7	16										
ORP (mV)	**--**	-145	-27	42	-76	-42	-142	-30	-59	-103	-95	-40	35	32	429	106	132	98	43	7	-61										

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - GA Class (TOGS 1.1.1)
3. MW-2SR dry, no sample collected.
4. Iron samples were inadvertently collected during the events prior to June 2013; iron is not a required analyte per the approved post-remedial groundwater monitoring plan.

Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = not analyzed for these parameters
"--" = No value available for the parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B7 = Detected in method blank at or above method reporting limit. Concentration was 10 times above the concentraion found in the blank.
H= Sample analyzed outside of laboratory method holding time.

Bold = Result exceeds GWQS.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 4 (CONT'D)

HISTORICAL SUMMARY OF SURFACE WATER ANALYTICAL DATA

Peter Cooper Gowanda Site
Gowanda, NY

PARAMETER[1]	GWQS[2,] Class "C" (T) Surface Water Standard	Sample Location																														
		SW-1										SW-2										SW-3									
		6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18	6/23/11	1/11/12	6/25/12	1/10/13	6/25/13	6/23/14	10/30/15	11/16/16	10/27/17	10/10/18
Volatile Organic Compounds (VOCs) - (ug/L)																																
1,1,1-Trichloroethane	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	--	3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	40	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Metals (mg/L)																																
Arsenic - Total	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium - Total	Note 3	0.016	ND	ND	0.0044	ND	ND	ND	ND	ND	ND	0.017	ND	ND	ND	ND	ND	0.0042	ND	ND	ND	0.024	ND	ND	ND	ND	ND	0.0004	ND	ND	ND	ND
Hexanalent Chromium - Total	0.05	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron - Total	0.3	**19.5**	ND	ND	**1.1**	NA	NA	NA	NA	NA	NA	**22**	ND	ND	**0.95**	NA	NA	NA	NA	NA	NA	**32.1**	ND	ND	**1**	--	--	NA	NA	NA	NA	
Manganese - Total	0.3	**0.35**	0.029	0.032	0.044	0.01	0.031	0.031	0.018	0.015	0.052	**0.44**	0.027	0.027	0.033	0.0078	0.017	0.091	0.017	0.011	0.051	0.62	0.27	0.024	0.033	0.025	0.017	0.18	0.017	0.011	0.046	
Dissolved Metals (mg/L)																																
Iron - Soluble		ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.07	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese - Soluble	--	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	ND	ND	NA	NA	NA	NA	NA	0.014	NA	NA	0.0035	
General Chemistry (mg/L)																																
Ammonia (as N)	0.035 [4]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.3**	ND	ND	ND	ND	0.034	ND	ND	0.032	ND	**0.13**	ND	ND	**0.047**	
Chloride	--	22	23.7	30.2	30.2	31.3	33.7	22.1	33.4	30	20.4	21.5	23.5	29.9	29.3	31.4	33.4	20	33.1	29.9	20.3	24.5	22.7	29.7	29.4	39.3	33.2	25.2	32.8	30.1	20	
Hardness as calcium carbonate	--	139	140	160	144	172	180	136	184	176	152	189	150	164	140	180	180	120	196	176	148	194	140	160	142	132	180	152	176	174	160	
Field Measurements (Units as Indicated)																																
Sample Information		*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	*Initial*	
pH (units)	6.5 - 8.5	8.17	8.08	**8.75**	7.93	8.24	8.21	7.85	8.08	8.46	8.67	8.16	8.29	8.44	7.21	8.54	8.32	7.96	7.82	8.32	8.45	8.51	7.91	8.53	8.14	8.41	8.42	7.12	7.95	8.4	8.71	
Temperature (oC)	--	26.2	4.1	21.5	3.3	23.5	24.3	10.2	6.3	10.1	21	23	3.3	22.8	2.6	24.8	23.8	10.1	6.3	10.5	23	23.9	3.8	23.7	2.7	25.9	23.9	10.2	6.1	13.9	21.8	
Specific Conductance (uS)	--	385.9	326.4	408.6	380	418.2	440	326.1	430.7	412.3	516	316.7	328.7	405.8	385	416.2	421	287.5	427.1	438.7	445	312.6	330	402.9	347	464.1	500	373	427.7	410.9	425.0	
Turbidity	--	405	21.6	41.9	19.7	21.3	10	117	6.14	6.04	69	626	23.8	31.1	23	27.4	10.2	140	2.99	5.9	73	934	20.6	32	34	24.3	11	116	4.86	6.96	57.00	
ORP (mV)	--	-105	7	2	103	80	58	11	-20	-38	+37	-75	16	18	117	-14	107	77	79	-4	-15	43	25	50	104	37	92	35	46	-131	-16	

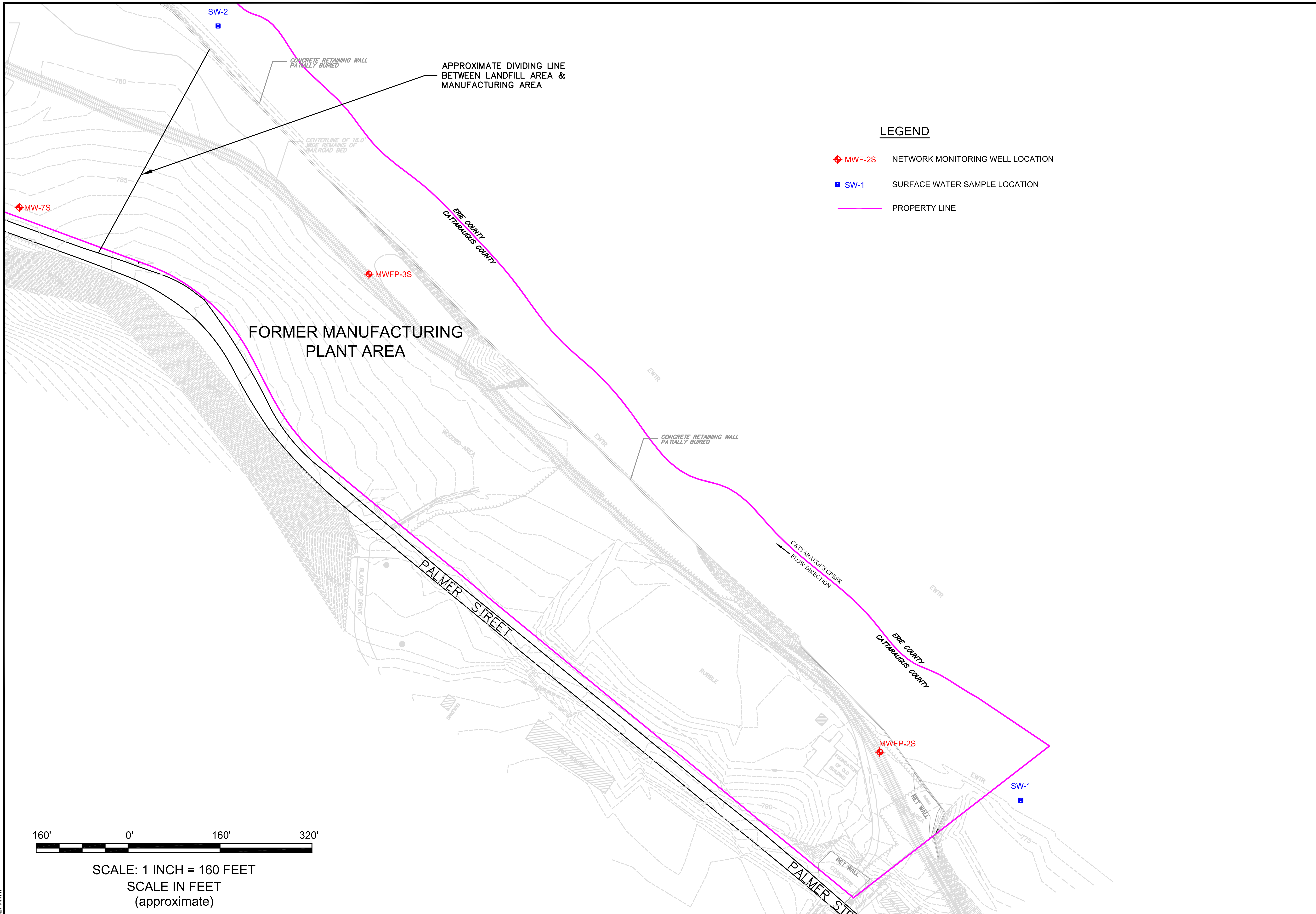
Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water-Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS1.1.1)- Class C (T).
3. Class C Standard (ug/l) caculated as: (0.86) exp (0.819 [ln ppm hardness] + 0.6848)
4. Value is pH and temperature dependent-per TOGS 1.1.1 lookup table.

Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = not analyzed for these parameters
NS = not sampled
"--" = No value available for the parameter.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
Bold = Result exceeds GWQS.

FIGURES


SW-2
CONCRETE RETAINING WALL PATIALLY BURIED
APPROXIMATE DIVIDING LINE BETWEEN LANDFILL AREA & MANUFACTURING AREA
CENTERLINE OF 16.0' WIDE REMAINS OF RAILROAD BED
LEGEND
MWF-2S NETWORK MONITORING WELL LOCATION
SW-1 SURFACE WATER SAMPLE LOCATION
PROPERTY LINE
MW-7S
ERIE COUNTY
CATTARAUGUS COUNTY
MWFP-3S
FORMER MANUFACTURING PLANT AREA
EWTR
CONCRETE RETAINING WALL PATIALLY BURIED
WOODED AREA
CATTARAUGUS CREEK FLOW DIRECTION
BLACKTOP DRIVE
PALMER STREET
RUBBLE
ERIE COUNTY
CATTARAUGUS COUNTY
MWFP-2S
SW-1
RET WALL
160' 0' 160' 320'
SCALE: 1 INCH = 160 FEET
SCALE IN FEET
(approximate)

DATE: FEBRUARY 2005 (REV SEPTEMBER 2010)
DRAFTED BY: BCH (REV AJZ)
FILEPATH:

F:\CAD\Benchmark\Collier Shannon\Gowanda Site\GROUNDWATER MONITORING PLAN\Figure 1: Former Manufacturing Plant Area.dwg, 9/16/2010 3:53:04 PM, Adobe PDF

BENCHMARK Environmental Engineering & Science, PLLC
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(716) 856-0599

JOB NO.: 0021-001-900

GROUNDWATER & SURFACE WATER MONITORING LOCATIONS - FORMER MANUFACTURING PLANT AREA

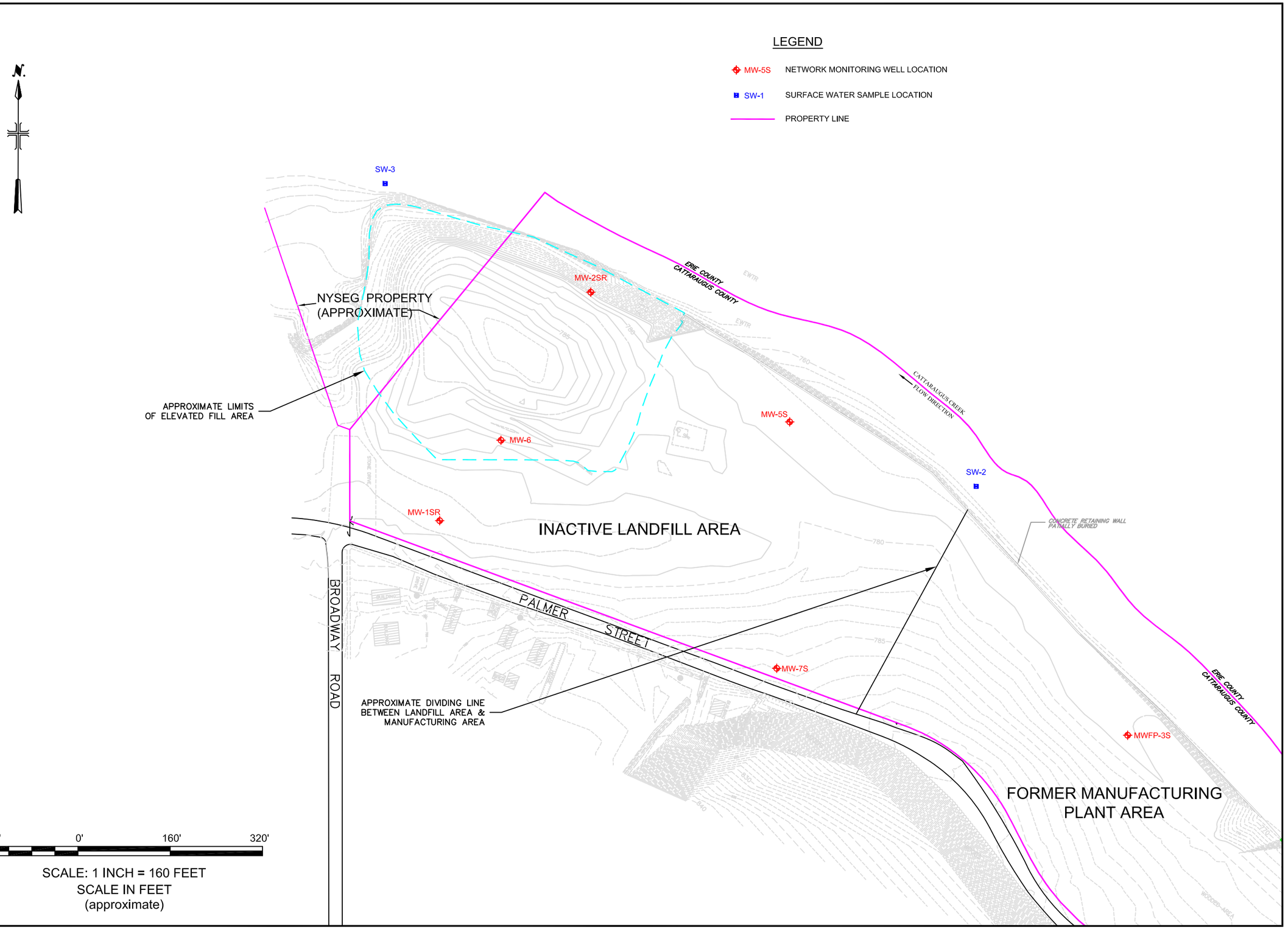
GROUNDWATER MONITORING PLAN

PETER COOPER GOWANDA SITE
GOWANDA, NEW YORK

PREPARED FOR
RESPONDANTS FOR PETER COOPER GOWANDA SITE

FIGURE 1

F:\CAD\Benchmark\Collier Shannon\Gowanda Site\GROUNDWATER MONITORING PLAN\Figure 2; Inactive Landfill Area.dwg, 9/16/2010 3:53:54 PM, Adobe PDF



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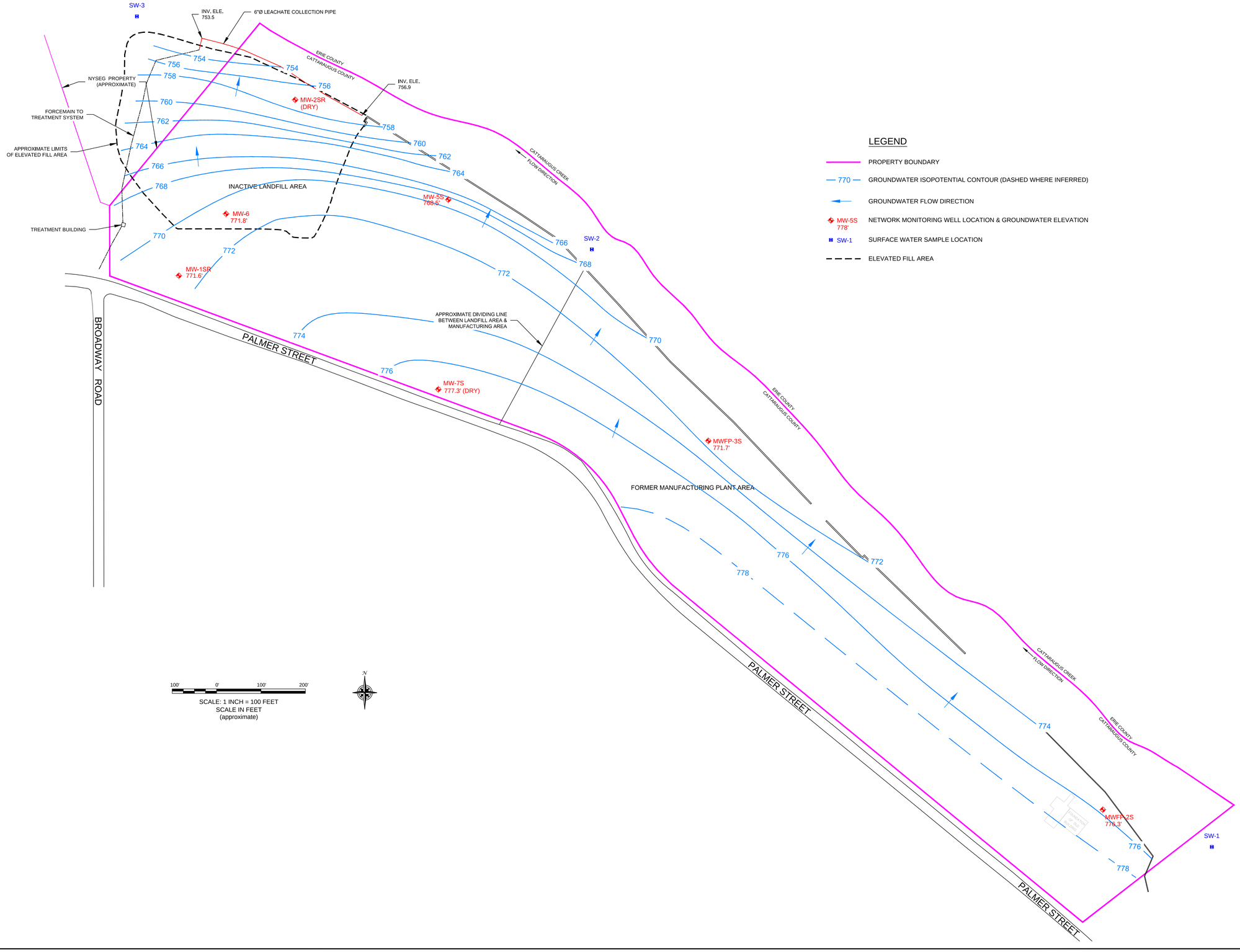
GROUNDWATER & SURFACE WATER MONITORING LOCATIONS - INACTIVE LANDFILL AREA

GROUNDWATER MONITORING PLAN

PETER COOPER GOWANDA SITE
GOWANDA, NEW YORK

PREPARED FOR
RESPONDANTS FOR PETER COOPER GOWANDA SITE

FIGURE 2



LEGEND

- PROPERTY BOUNDARY
- 770 — GROUNDWATER ISOPOTENTIAL CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- MW-5S 778' NETWORK MONITORING WELL LOCATION & GROUNDWATER ELEVATION
- SW-1 SURFACE WATER SAMPLE LOCATION
- ELEVATED FILL AREA

100' 0' 100' 200'

SCALE: 1 INCH = 100 FEET
SCALE IN FEET
(approximate)

N

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
2558 HAMBURG TURNPIKE
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BUFFALO, NY 14218
(716) 856-0599

JOB NO.: 0021-010-500

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

DRAWN BY: CMC
DATE: OCTOBER 2018
CHECKED BY: THF
APPROVED BY: THF

GROUNDWATER & SURFACE WATER MONITORING ISOPOTENTIAL MAP

ANNUAL SUMMARY REPORT OCTOBER 2018

PETER COOPER GOWANDA SITE
GOWANDA, NEW YORK

PREPARED FOR

RESPONDANTS FOR PETER COOPER GOWANDA SITE

FIGURE 3

ATTACHMENT 1

SAMPLE COLLECTION LOGS

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Peter Cooper Gowanda Site Date: 10/10/18

Location: Gowanda Project No.: 0021-010-500 Field Team: RLD

Well No. MW-7s			Diameter (inches): 2"			Sample Date / Time: 10/10/18			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR): 10.48			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☑ Purge & Sample			
Total Depth (fbTOR): 16.37			Total Volume Purged (gal):			Purge Method: lowflow			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
0911	1		6.95	18.5	1161	33		-55	clear
	2	.10	6.82	17.5	1190	34		-25	
	3	.15	6.78	17.2	1205	32		-25	
	4	.20	6.95	17.3	1193	30		-90	
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
0916	S1 10.95	.20	6.88	17.5	1228	31		-86	clear
0928	S2		7.13	18.3	1207	21		-86	clear

Well No. MWFP-2S			Diameter (inches): 2"			Sample Date / Time: 10/10/18			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR): 9.73			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☑ Purge & Sample			
Total Depth (fbTOR): 14.07			Total Volume Purged (gal):			Purge Method: lowflow			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
1006	2		7.20	17.7	1194	68		-12	Cloudy
	3	.25	7.11	17.1	1188	133		-12	Cloudy
	4	.40	7.04	17.3	1192	63		-8	cloudy
	5	.60	7.03	17.4	1163	25		-23	clear
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1011	S1	.75	7.05	17.2	1141	12		-53	clear
	S2	.85	7.13	19.2	1121	4		-95	clear

REMARKS: MW-7s - Blind Dup taken

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Peter Cooper Gowanda Site Date: 10/10/18

Location: Gowanda Project No.: 0021-010-500 Field Team: RCD

Well No. MWFP-3S			Diameter (inches): 2"			Sample Date / Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled ☐ Development ☐ Sample ☐ Purge & Sample			
DTW (static) (fbTOR): 9.0			One Well Volume (gal):			Purpose:			
Total Depth (fbTOR):			Total Volume Purged (gal):			Purge Method: lowflow			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
1041	2		6.84	19.1	1912	>100		-122	BLACK/DARK
	3	.40	6.74	17.7	1791	40		-113	Clear
	4	.80	6.73	17.3	1791	31		-102	Clear
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1044	S1 10.15	.50	6.76	17.4	1531	45		-74	Clear
1050	S2 10.80	.80	6.75	17.7	1850	16		-61	Clear

Well No. MW-1SR			Diameter (inches): 2"			Sample Date / Time: 10/10/18			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR): 11.87			Total Volume Purged (gal):			Purge Method: lowflow			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
0837	0 Initial		7.97	14.2	930	125		-66	TURBID
	1	.10	6.90	18.3	829	49		-79	Cloudy
	2	.15	6.75	18.0	900	44		-77	Cloudy
	3	.25	6.75	17.8	807	30		-84	Clear
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
0842	S1	.30	6.74	17.8	795	10		-82	Clear
0854	S2	.45	6.88	18.7	816	8		-54	Clear

REMARKS: ~well CASING at MW FP-3S DAMAGED.

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

GROUNDWATER FIELD FORM

Project Name: Peter Cooper Gowanda Site Date: 10/10/18

Location: Gowanda Project No.: 0021-010-500 Field Team: RLO

Well No. MW-5S			Diameter (inches): 2"			Sample Date / Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR): 12.65			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☑ Purge & Sample			
Total Depth (fbTOR):			Total Volume Purged (gal):			Purge Method: lowflow			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
1104	0 Initial		6.91	18.8	2038	>100		-81	Rust color
	1		6.78	17.1	2250	157		-78	TURBID
1112	2	1	6.76	16.8	2457	56		-42	cloudy
1113	3	1.20	6.73	16.6	2485	22		-84	clear
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
1114	S1 13.00	1.50	6.73	17.1	2462	33		-90	clear
1120	S2 12.95	3	6.89	18.4	2483	12		-140	clear

Well No.			Diameter (inches):			Sample Date / Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			One Well Volume (gal):			Purpose: ☐ Development ☐ Sample ☐ Purge & Sample			
Total Depth (fbTOR):			Total Volume Purged (gal):			Purge Method: lowflow			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

REMARKS: MS/MSD taken @ MW-5

Note: All water level measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

WATER SAMPLE COLLECTION LOG

PROJECT INFORMATION

Project Name: Peter Cooper Gowanda Site
Project No.: 0021-010-500
Client:
Location: Gowanda, NY

SAMPLE DESCRIPTION

I.D.: ~~SW-3~~ SW-1
Matrix: ☑ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER ☐ INFLUENT ☐ EFFLUENT

SAMPLE INFORMATION

Date Collected: 10/10/18
Time Collected: 11:45
Date Shipped to Lab:
Collected By: ~~PWW/MRR~~ RLD
Sample Type: ☐ POINT ☑ GRAB ☐ COMPOSITE
Sample Collection Method: ☑ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☐ OTHER

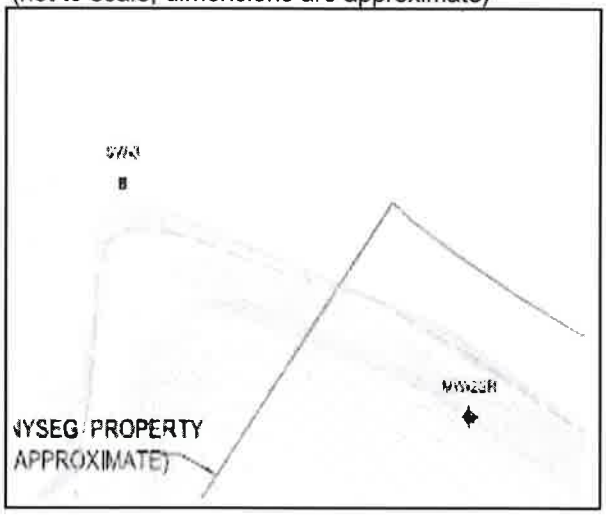
SAMPLING INFORMATION

Weather:
Air Temperature:

Parameter	First	Last	Units
pH	8.67		units
Temp.	21		°C
Cond.	516		mS
Turbidity	69		NTU
Eh / ORP	+37		mV
D.O.			ppm
Odor			olfactory
Appearance	cloudy		visual

LOCATION SKETCH

(not to scale, dimensions are approximate)



EXACT LOCATION (if applicable)

Northing (ft)	Easting (ft)	Surface Elevation (fmsl)

SAMPLE DESCRIPTION (appearance, olfactory):

SAMPLE ANALYSIS (depth, laboratory analysis required):

ADDITIONAL REMARKS: MS/MSD collected. Collected for DISS METALS FIELD FILTER IN LAB

PREPARED BY: RLD **DATE:** 10/10/18

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

WATER SAMPLE COLLECTION LOG

PROJECT INFORMATION

Project Name: Peter Cooper Gowanda Site
Project No.: 0021-010-500
Client:
Location: Gowanda, NY

SAMPLE DESCRIPTION

I.D.: **SW-2**

Matrix: ☑ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER ☐ INFLUENT ☐ EFFLUENT

SAMPLE INFORMATION

Date Collected: 10/10/18
Time Collected: 1202
Date Shipped to Lab:
Collected By: ~~PWWMPP~~ RLD
Sample Collection Method: ☑ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☐ OTHER

Sample Type: ☐ POINT ☑ GRAB ☐ COMPOSITE

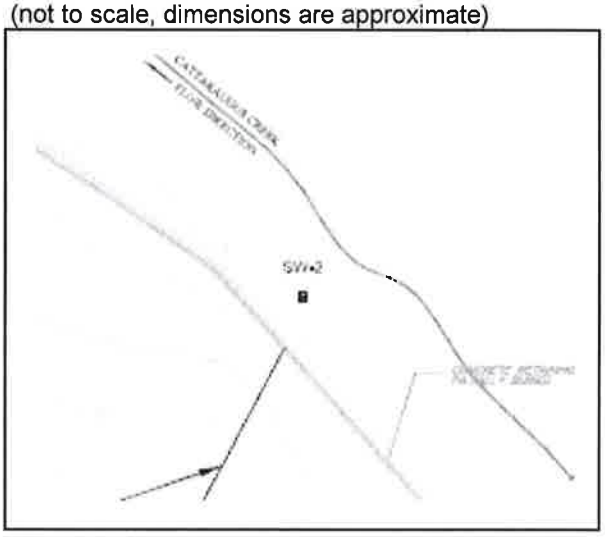
SAMPLING INFORMATION

Weather:
Air Temperature:

Parameter	First	Last	Units
pH	8.45		units
Temp.	23		°C
Cond.	4/45		mS
Turbidity	73		NTU
Eh / ORP	-15		mV
D.O.			ppm
Odor			olfactory
Appearance	cloudy		visual

LOCATION SKETCH

(not to scale, dimensions are approximate)



EXACT LOCATION (if applicable)

Northing (ft)	Easting (ft)	Surface Elevation (fmsl)

SAMPLE DESCRIPTION (appearance, olfactory):

SAMPLE ANALYSIS (depth, laboratory analysis required):

ADDITIONAL REMARKS: BLWO Dup Collected. collected Diss Metals For LAB Filtering

PREPARED BY: RLD **DATE:** 10/10/18

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

WATER SAMPLE COLLECTION LOG

PROJECT INFORMATION

Project Name: Peter Cooper Gowanda Site
Project No.: 0021-010-500
Client:
Location: Gowanda, NY

SAMPLE DESCRIPTION

I.D.: SW-3
Matrix: ☑ SURFACE WATER ☐ STORM ☐ SEEP ☐ OTHER ☐ INFLUENT ☐ EFFLUENT

SAMPLE INFORMATION

Date Collected: 10/10/18
Time Collected: 12:25
Date Shipped to Lab:
Collected By: PWW/MPP
Sample Type: ☐ POINT ☑ GRAB ☐ COMPOSITE
Sample Collection Method: ☑ DIRECT DIP ☐ SS / POLY. DIPPER ☐ PERISTALTIC PUMP ☐ POLY. DISP. BAILER ☐ ISCO SAMPLER ☐ OTHER

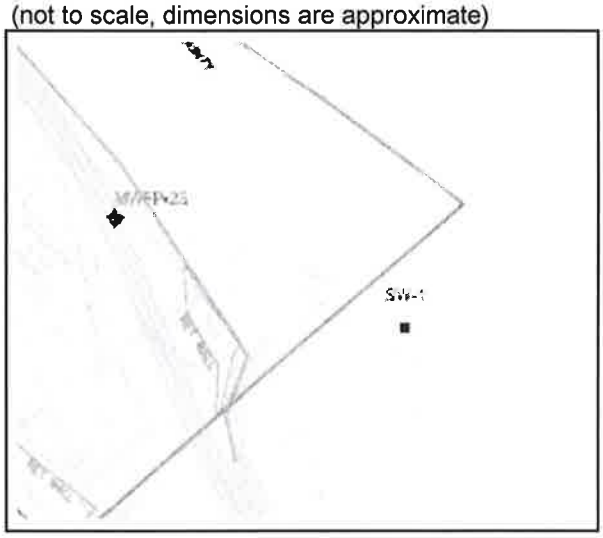
SAMPLING INFORMATION

Weather:
Air Temperature:

Parameter	First	Last	Units
pH	8.71		units
Temp.	21.8		°C
Cond.	425		mS
Turbidity	57		NTU
Eh / ORP	-16		mV
D.O.			ppm
Odor			olfactory
Appearance	cloudy		visual

LOCATION SKETCH

(not to scale, dimensions are approximate)



EXACT LOCATION (if applicable)

Northing (ft)	Easting (ft)	Surface Elevation (fmsl)

SAMPLE DESCRIPTION (appearance, olfactory):

SAMPLE ANALYSIS (depth, laboratory analysis required):

ADDITIONAL REMARKS: Collected ASS metals sample for lab filtering

PREPARED BY: RLO **DATE:** 10/10/18

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica

Client Information Client Contact: ~~Heidi Higgins~~ Rick Dolst	Sampler: RLD Phone:	Lab PM: Fischer, Brian J E-Mail: brian.fischer@testamericainc.com	Carrier Tracking No(s):	COC No: 480-119954-5100.1 Page: Page 1 of 1 Job #:
Company: Benchmark Env. Eng. & Science, PLLC				
Address: 2558 Hamburg Turnpike Suite 300	Due Date Requested:			
City: Lackawanna State, Zip: NY, 14218 Phone:	TAT Requested (days):			
Email: ~~HHiggins@benchmarkturnkey.com~~	PO #: Purchase Order Requested WO #:			
Project Name: Benchmark-Peter Cooper sites	Project #: 48004066			
Site: New York	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	350.1 - Ammonia (as N)	2340C - Hardness as calcium carbonate	SM4500_S2_D - Sulfide	SM4500_Cl_E - Chloride	7196A - Chromium (hexavalent)	8260C - TCL list OLM04.2	6010C - (MOD)As/Cr/Mn only	6010C - (MOD) D. As/Cr/Mn only *	8260C - (MOD) chlorinated only	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X	S	D	CB	N	N	A	D	D	A	X	
MW-7S	10/10/17	0916	G	Water			✓	✓	✓	✓	✓	✓	✓				
MW-1SR	↓	0842	↓	Water			X	X	X	X	X	X	X				
MW-5S		1119		Water			X	X	X	X	X	X	X				
SW-1		1145		Water			X	X	X	X	X	X	X	X			* Dissolved metals
SW-2		1202		Water			X	X	X	X	X	X	X	X			* Bottles need to
SW-3		1225		Water			X	X	X	X	X	X	X	X			* be filtered by
MWFP-2S		1011		Water							X		X		X		LAB for SW-1, SW-2
MWFP-3S		1044		Water							X		X		X		and SW-3
Blind duplicate SW-2		1200		Water							X	X	X				
Matrix Spike SW-1		1145		Water							X	X	X				
Matrix Spike Duplicate SW-1	↓	1145	↓	Water							X	X	X				

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	10/10/17 - 1430	BM/TK			

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

ATTACHMENT 2

TESTAMERICA LABORATORIES, INC.
SAMPLE DATA SUMMARY PACKAGE
OCTOBER 2018

BENCHMARK

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-143191-1
Client Project/Site: Benchmark-Peter Cooper sites
Sampling Event: Annual sampling

For:
Benchmark Env. Eng. & Science, PLLC
2558 Hamburg Turnpike
Suite 300
Lackawanna, New York 14218

Attn: Mr. Tom Forbes

Authorized for release by:
10/19/2018 11:46:35 AM

Brian Fischer, Manager of Project Management
(716)504-9835
brian.fischer@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-143191-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-143191-1

Comments
No additional comments.

Receipt
The samples were received on 10/10/2018 5:26 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.4° C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

GC/MS VOA
Method(s) 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-5S (480-143191-2), MWFP-2S (480-143191-8) and MWFP-3S (480-143191-9). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-439589 recovered above the upper control limit for Vinyl chloride, Chlorodibromomethane, and 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: Blind Duplicate (480-143191-1), MW-5S (480-143191-2), MW-7S (480-143191-3), MW-1SR (480-143191-4), SW-1 (480-143191-5), SW-2 (480-143191-6), SW-3 (480-143191-7), MWFP-2S (480-143191-8), MWFP-3S (480-143191-9) and Trip Blank (480-143191-10).

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

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

General Chemistry
Method(s) 7196A: The following samples were run outside holding time due to laboratory oversight: MWFP-2S (480-143191-8), MWFP-3S (480-143191-9).

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

Detection Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: Blind Duplicate — Lab Sample ID: 480-143191-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.050		0.0030		mg/L	1		6010C	Total/NA

Client Sample ID: MW-5S — Lab Sample ID: 480-143191-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	1.2	J	2.0	0.88	ug/L	2		8260C	Total/NA
Manganese	0.93		0.0030		mg/L	1		6010C	Total/NA
Ammonia (as N)	7.5		0.20		mg/L	10		350.1	Total/NA
Hardness as calcium carbonate	1260		10.0		mg/L	1		SM 2340C	Total/NA
Chloride	11.5		1.0		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MW-7S — Lab Sample ID: 480-143191-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.031		0.015		mg/L	1		6010C	Total/NA
Manganese	1.3		0.0030		mg/L	1		6010C	Total/NA
Ammonia (as N)	14.3		0.20		mg/L	10		350.1	Total/NA
Hardness as calcium carbonate	456		4.0		mg/L	1		SM 2340C	Total/NA
Chloride	29.8		1.0		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MW-1SR — Lab Sample ID: 480-143191-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	1.5	J	10	1.3	ug/L	1		8260C	Total/NA
Acetone	3.0	J	10	3.0	ug/L	1		8260C	Total/NA
Manganese	6.2		0.0030		mg/L	1		6010C	Total/NA
Ammonia (as N)	0.97		0.020		mg/L	1		350.1	Total/NA
Hardness as calcium carbonate	416		4.0		mg/L	1		SM 2340C	Total/NA
Chloride	8.0		1.0		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-1 — Lab Sample ID: 480-143191-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.052		0.0030		mg/L	1		6010C	Total/NA
Hardness as calcium carbonate	152		4.0		mg/L	1		SM 2340C	Total/NA
Chloride	20.4		1.0		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-2 — Lab Sample ID: 480-143191-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.051		0.0030		mg/L	1		6010C	Total/NA
Hardness as calcium carbonate	148		4.0		mg/L	1		SM 2340C	Total/NA
Chloride	20.3		1.0		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: SW-3 — Lab Sample ID: 480-143191-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.046		0.0030		mg/L	1		6010C	Total/NA
Manganese, Dissolved	0.0035		0.0030		mg/L	1		6010C	Dissolved
Ammonia (as N)	0.047		0.020		mg/L	1		350.1	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-3 (Continued) — Lab Sample ID: 480-143191-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	160		4.0		mg/L	1		SM 2340C	Total/NA
Chloride	20.0		1.0		mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: MWFP-2S — Lab Sample ID: 480-143191-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.020		0.0040		mg/L	1		6010C	Total/NA
Manganese	0.37		0.0030		mg/L	1		6010C	Total/NA

Client Sample ID: MWFP-3S — Lab Sample ID: 480-143191-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	2.9		2.0	1.6	ug/L	2		8260C	Total/NA
1,1-Dichloroethane	1.7	J	2.0	0.76	ug/L	2		8260C	Total/NA
Chloroform	1.3	J	2.0	0.68	ug/L	2		8260C	Total/NA
cis-1,2-Dichloroethene	8.1		2.0	1.6	ug/L	2		8260C	Total/NA
Methylene Chloride	1.4	J	2.0	0.88	ug/L	2		8260C	Total/NA
Tetrachloroethene	8.5		2.0	0.72	ug/L	2		8260C	Total/NA
Trichloroethene	3.2		2.0	0.92	ug/L	2		8260C	Total/NA
Chromium	0.0065		0.0040		mg/L	1		6010C	Total/NA
Manganese	6.6		0.0030		mg/L	1		6010C	Total/NA
Chromium (hexavalent)	0.021	H	0.010		mg/L	1		7196A	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 480-143191-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: Blind Duplicate

Date Collected: 10/10/18 12:00
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 11:39	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 11:39	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 11:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 11:39	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 11:39	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 11:39	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 11:39	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 11:39	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 11:39	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 11:39	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 11:39	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 11:39	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 11:39	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 11:39	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 11:39	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/16/18 11:39	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 11:39	1
Acetone	ND		10	3.0	ug/L			10/16/18 11:39	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 11:39	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 11:39	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 11:39	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 11:39	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 11:39	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 11:39	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 11:39	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 11:39	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 11:39	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 11:39	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 11:39	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 11:39	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 11:39	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 11:39	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 11:39	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 11:39	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 11:39	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 11:39	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 11:39	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 11:39	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 11:39	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 11:39	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 11:39	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 11:39	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 11:39	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 11:39	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 11:39	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 11:39	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 11:39	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 11:39	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: Blind Duplicate

Date Collected: 10/10/18 12:00
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*10/16/18 11:39*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/16/18 11:39*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*10/16/18 11:39*	*1*
Dibromofluoromethane (Surr)	*111*		*75 - 123*		*10/16/18 11:39*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 13:47	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 13:47	1
Manganese	**0.050**		0.0030		mg/L		10/12/18 08:33	10/12/18 13:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MW-5S
Date Collected: 10/10/18 11:14
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			10/16/18 12:06	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			10/16/18 12:06	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			10/16/18 12:06	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			10/16/18 12:06	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			10/16/18 12:06	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			10/16/18 12:06	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			10/16/18 12:06	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			10/16/18 12:06	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			10/16/18 12:06	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			10/16/18 12:06	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			10/16/18 12:06	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			10/16/18 12:06	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			10/16/18 12:06	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			10/16/18 12:06	2
2-Hexanone	ND		10	2.5	ug/L			10/16/18 12:06	2
2-Butanone (MEK)	ND		20	2.6	ug/L			10/16/18 12:06	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			10/16/18 12:06	2
Acetone	ND		20	6.0	ug/L			10/16/18 12:06	2
Benzene	ND		2.0	0.82	ug/L			10/16/18 12:06	2
Bromodichloromethane	ND		2.0	0.78	ug/L			10/16/18 12:06	2
Bromoform	ND		2.0	0.52	ug/L			10/16/18 12:06	2
Bromomethane	ND		2.0	1.4	ug/L			10/16/18 12:06	2
Carbon disulfide	ND		2.0	0.38	ug/L			10/16/18 12:06	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			10/16/18 12:06	2
Chlorobenzene	ND		2.0	1.5	ug/L			10/16/18 12:06	2
Dibromochloromethane	ND		2.0	0.64	ug/L			10/16/18 12:06	2
Chloroethane	ND		2.0	0.64	ug/L			10/16/18 12:06	2
Chloroform	ND		2.0	0.68	ug/L			10/16/18 12:06	2
Chloromethane	ND		2.0	0.70	ug/L			10/16/18 12:06	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			10/16/18 12:06	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			10/16/18 12:06	2
Cyclohexane	ND		2.0	0.36	ug/L			10/16/18 12:06	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			10/16/18 12:06	2
Ethylbenzene	ND		2.0	1.5	ug/L			10/16/18 12:06	2
Isopropylbenzene	ND		2.0	1.6	ug/L			10/16/18 12:06	2
Methyl acetate	ND		5.0	2.6	ug/L			10/16/18 12:06	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			10/16/18 12:06	2
Methylcyclohexane	ND		2.0	0.32	ug/L			10/16/18 12:06	2
Methylene Chloride	**1.2**	**J**	2.0	0.88	ug/L			10/16/18 12:06	2
Styrene	ND		2.0	1.5	ug/L			10/16/18 12:06	2
Tetrachloroethene	ND		2.0	0.72	ug/L			10/16/18 12:06	2
Toluene	ND		2.0	1.0	ug/L			10/16/18 12:06	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			10/16/18 12:06	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			10/16/18 12:06	2
Trichloroethene	ND		2.0	0.92	ug/L			10/16/18 12:06	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			10/16/18 12:06	2
Vinyl chloride	ND		2.0	1.8	ug/L			10/16/18 12:06	2
Xylenes, Total	ND		4.0	1.3	ug/L			10/16/18 12:06	2

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MW-5S
Date Collected: 10/10/18 11:14
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-2
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*10/16/18 12:06*	*2*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/16/18 12:06*	*2*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*10/16/18 12:06*	*2*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*10/16/18 12:06*	*2*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 13:51	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 13:51	1
Manganese	**0.93**		0.0030		mg/L		10/12/18 08:33	10/12/18 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**7.5**		0.20		mg/L			10/13/18 12:48	10
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1
Hardness as calcium carbonate	**1260**		10.0		mg/L			10/16/18 09:00	1
Chloride	**11.5**		1.0		mg/L			10/15/18 17:48	1
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Client Sample ID: MW-7S
Date Collected: 10/10/18 09:16
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 12:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 12:33	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 12:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 12:33	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 12:33	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 12:33	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 12:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 12:33	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 12:33	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 12:33	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 12:33	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 12:33	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 12:33	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 12:33	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 12:33	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/16/18 12:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 12:33	1
Acetone	ND		10	3.0	ug/L			10/16/18 12:33	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 12:33	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 12:33	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 12:33	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 12:33	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 12:33	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 12:33	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 12:33	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 12:33	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 12:33	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 12:33	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 12:33	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 12:33	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 12:33	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 12:33	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 12:33	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 12:33	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 12:33	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 12:33	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 12:33	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 12:33	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 12:33	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 12:33	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 12:33	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 12:33	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 12:33	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 12:33	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 12:33	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 12:33	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 12:33	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 12:33	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MW-7S
Date Collected: 10/10/18 09:16
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-3
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*10/16/18 12:33*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/16/18 12:33*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*10/16/18 12:33*	*1*
Dibromofluoromethane (Surr)	*107*		*75 - 123*		*10/16/18 12:33*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.031**		0.015		mg/L		10/12/18 08:33	10/12/18 13:55	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 13:55	1
Manganese	**1.3**		0.0030		mg/L		10/12/18 08:33	10/12/18 13:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**14.3**		0.20		mg/L			10/13/18 12:48	10
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1
Hardness as calcium carbonate	**456**		4.0		mg/L			10/16/18 09:00	1
Chloride	**29.8**		1.0		mg/L			10/15/18 18:04	1
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Client Sample ID: MW-1SR

Date Collected: 10/10/18 08:42
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 13:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 13:00	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 13:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 13:00	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 13:00	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 13:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 13:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 13:00	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 13:00	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 13:00	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 13:00	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 13:00	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 13:00	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 13:00	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 13:00	1
2-Butanone (MEK)	**1.5**	**J**	10	1.3	ug/L			10/16/18 13:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 13:00	1
Acetone	**3.0**	**J**	10	3.0	ug/L			10/16/18 13:00	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 13:00	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 13:00	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 13:00	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 13:00	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 13:00	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 13:00	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 13:00	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 13:00	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 13:00	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 13:00	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 13:00	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 13:00	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 13:00	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 13:00	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 13:00	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 13:00	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 13:00	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 13:00	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 13:00	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 13:00	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 13:00	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 13:00	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 13:00	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 13:00	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 13:00	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 13:00	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 13:00	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 13:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 13:00	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 13:00	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MW-1SR

Date Collected: 10/10/18 08:42
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*10/16/18 13:00*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/16/18 13:00*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*10/16/18 13:00*	*1*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*10/16/18 13:00*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 13:59	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 13:59	1
Manganese	**6.2**		0.0030		mg/L		10/12/18 08:33	10/12/18 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.97**		0.020		mg/L			10/13/18 12:49	1
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1
Hardness as calcium carbonate	**416**		4.0		mg/L			10/16/18 09:00	1
Chloride	**8.0**		1.0		mg/L			10/15/18 18:04	1
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-1
Date Collected: 10/10/18 11:45
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	F1 F2	1.0	0.82	ug/L			10/16/18 13:28	1
1,1,2,2-Tetrachloroethane	ND	F1 F2	1.0	0.21	ug/L			10/16/18 13:28	1
1,1,2-Trichloroethane	ND	F1 F2	1.0	0.23	ug/L			10/16/18 13:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F1 F2	1.0	0.31	ug/L			10/16/18 13:28	1
1,1-Dichloroethane	ND	F1 F2	1.0	0.38	ug/L			10/16/18 13:28	1
1,1-Dichloroethene	ND	F1 F2	1.0	0.29	ug/L			10/16/18 13:28	1
1,2,4-Trichlorobenzene	ND	F1 F2	1.0	0.41	ug/L			10/16/18 13:28	1
1,2-Dibromo-3-Chloropropane	ND	F1 F2	1.0	0.39	ug/L			10/16/18 13:28	1
1,2-Dibromoethane	ND	F1 F2	1.0	0.73	ug/L			10/16/18 13:28	1
1,2-Dichlorobenzene	ND	F1 F2	1.0	0.79	ug/L			10/16/18 13:28	1
1,2-Dichloroethane	ND	F1 F2	1.0	0.21	ug/L			10/16/18 13:28	1
1,2-Dichloropropane	ND	F1 F2	1.0	0.72	ug/L			10/16/18 13:28	1
1,3-Dichlorobenzene	ND	F1 F2	1.0	0.78	ug/L			10/16/18 13:28	1
1,4-Dichlorobenzene	ND	F1	1.0	0.84	ug/L			10/16/18 13:28	1
2-Hexanone	ND	F1 F2	5.0	1.2	ug/L			10/16/18 13:28	1
2-Butanone (MEK)	ND	F1 F2	10	1.3	ug/L			10/16/18 13:28	1
4-Methyl-2-pentanone (MIBK)	ND	F1 F2	5.0	2.1	ug/L			10/16/18 13:28	1
Acetone	ND	F1 F2	10	3.0	ug/L			10/16/18 13:28	1
Benzene	ND	F1 F2	1.0	0.41	ug/L			10/16/18 13:28	1
Bromodichloromethane	ND	F1 F2	1.0	0.39	ug/L			10/16/18 13:28	1
Bromoform	ND	F1 F2	1.0	0.26	ug/L			10/16/18 13:28	1
Bromomethane	ND	F1 F2	1.0	0.69	ug/L			10/16/18 13:28	1
Carbon disulfide	ND	F1 F2	1.0	0.19	ug/L			10/16/18 13:28	1
Carbon tetrachloride	ND	F1 F2	1.0	0.27	ug/L			10/16/18 13:28	1
Chlorobenzene	ND	F1 F2	1.0	0.75	ug/L			10/16/18 13:28	1
Dibromochloromethane	ND	F1 F2	1.0	0.32	ug/L			10/16/18 13:28	1
Chloroethane	ND	F1 F2	1.0	0.32	ug/L			10/16/18 13:28	1
Chloroform	ND	F1 F2	1.0	0.34	ug/L			10/16/18 13:28	1
Chloromethane	ND	F1 F2	1.0	0.35	ug/L			10/16/18 13:28	1
cis-1,2-Dichloroethene	ND	F1 F2	1.0	0.81	ug/L			10/16/18 13:28	1
cis-1,3-Dichloropropene	ND	F1 F2	1.0	0.36	ug/L			10/16/18 13:28	1
Cyclohexane	ND	F1 F2	1.0	0.18	ug/L			10/16/18 13:28	1
Dichlorodifluoromethane	ND	F1 F2	1.0	0.68	ug/L			10/16/18 13:28	1
Ethylbenzene	ND	F1 F2	1.0	0.74	ug/L			10/16/18 13:28	1
Isopropylbenzene	ND	F1	1.0	0.79	ug/L			10/16/18 13:28	1
Methyl acetate	ND	F1 F2	2.5	1.3	ug/L			10/16/18 13:28	1
Methyl tert-butyl ether	ND	F1 F2	1.0	0.16	ug/L			10/16/18 13:28	1
Methylcyclohexane	ND	F1 F2	1.0	0.16	ug/L			10/16/18 13:28	1
Methylene Chloride	ND	F1 F2	1.0	0.44	ug/L			10/16/18 13:28	1
Styrene	ND	F1 F2	1.0	0.73	ug/L			10/16/18 13:28	1
Tetrachloroethene	ND	F1 F2	1.0	0.36	ug/L			10/16/18 13:28	1
Toluene	ND	F1 F2	1.0	0.51	ug/L			10/16/18 13:28	1
trans-1,2-Dichloroethene	ND	F1 F2	1.0	0.90	ug/L			10/16/18 13:28	1
trans-1,3-Dichloropropene	ND	F1 F2	1.0	0.37	ug/L			10/16/18 13:28	1
Trichloroethene	ND	F1 F2	1.0	0.46	ug/L			10/16/18 13:28	1
Trichlorofluoromethane	ND	F1 F2	1.0	0.88	ug/L			10/16/18 13:28	1
Vinyl chloride	ND	F1 F2	1.0	0.90	ug/L			10/16/18 13:28	1
Xylenes, Total	ND	F1 F2	2.0	0.66	ug/L			10/16/18 13:28	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-1
Date Collected: 10/10/18 11:45
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-5
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*10/16/18 13:28*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/16/18 13:28*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*10/16/18 13:28*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 123*		*10/16/18 13:28*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 14:02	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 14:02	1
Manganese	**0.052**		0.0030		mg/L		10/12/18 08:33	10/12/18 14:02	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	ND		0.015		mg/L		10/15/18 12:08	10/16/18 09:33	1
Chromium, Dissolved	ND		0.0040		mg/L		10/15/18 12:08	10/16/18 09:33	1
Manganese, Dissolved	ND		0.0030		mg/L		10/15/18 12:08	10/16/18 09:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.020		mg/L			10/13/18 12:50	1
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1
Hardness as calcium carbonate	**152**		4.0		mg/L			10/16/18 09:00	1
Chloride	**20.4**		1.0		mg/L			10/15/18 18:04	1
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-2
Date Collected: 10/10/18 12:02
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 13:55	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 13:55	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 13:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 13:55	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 13:55	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 13:55	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 13:55	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 13:55	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 13:55	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 13:55	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 13:55	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 13:55	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 13:55	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 13:55	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 13:55	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/16/18 13:55	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 13:55	1
Acetone	ND		10	3.0	ug/L			10/16/18 13:55	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 13:55	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 13:55	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 13:55	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 13:55	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 13:55	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 13:55	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 13:55	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 13:55	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 13:55	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 13:55	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 13:55	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 13:55	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 13:55	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 13:55	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 13:55	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 13:55	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 13:55	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 13:55	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 13:55	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 13:55	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 13:55	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 13:55	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 13:55	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 13:55	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 13:55	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 13:55	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 13:55	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 13:55	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 13:55	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 13:55	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-2

Date Collected: 10/10/18 12:02
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*10/16/18 13:55*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/16/18 13:55*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*10/16/18 13:55*	*1*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*10/16/18 13:55*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 14:32	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 14:32	1
Manganese	**0.051**		0.0030		mg/L		10/12/18 08:33	10/12/18 14:32	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	ND		0.015		mg/L		10/15/18 12:08	10/16/18 09:52	1
Chromium, Dissolved	ND		0.0040		mg/L		10/15/18 12:08	10/16/18 09:52	1
Manganese, Dissolved	ND		0.0030		mg/L		10/15/18 12:08	10/16/18 09:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.020		mg/L			10/13/18 12:51	1
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1
Hardness as calcium carbonate	**148**		4.0		mg/L			10/16/18 09:00	1
Chloride	**20.3**		1.0		mg/L			10/15/18 18:04	1
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-3
Date Collected: 10/10/18 12:25
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 14:22	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 14:22	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 14:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 14:22	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 14:22	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 14:22	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 14:22	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 14:22	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 14:22	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 14:22	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 14:22	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 14:22	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 14:22	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 14:22	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 14:22	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/16/18 14:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 14:22	1
Acetone	ND		10	3.0	ug/L			10/16/18 14:22	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 14:22	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 14:22	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 14:22	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 14:22	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 14:22	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 14:22	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 14:22	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 14:22	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 14:22	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 14:22	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 14:22	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 14:22	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 14:22	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 14:22	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 14:22	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 14:22	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 14:22	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 14:22	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 14:22	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 14:22	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 14:22	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 14:22	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 14:22	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 14:22	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 14:22	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 14:22	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 14:22	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 14:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 14:22	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 14:22	1

Client Sample ID: SW-3

Date Collected: 10/10/18 12:25
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-7

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*10/16/18 14:22*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/16/18 14:22*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*10/16/18 14:22*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*10/16/18 14:22*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 14:36	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 14:36	1
Manganese	**0.046**		0.0030		mg/L		10/12/18 08:33	10/12/18 14:36	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	ND		0.015		mg/L		10/15/18 12:08	10/16/18 09:56	1
Chromium, Dissolved	ND		0.0040		mg/L		10/15/18 12:08	10/16/18 09:56	1
Manganese, Dissolved	**0.0035**		0.0030		mg/L		10/15/18 12:08	10/16/18 09:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.047**		0.020		mg/L			10/13/18 12:52	1
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1
Hardness as calcium carbonate	**160**		4.0		mg/L			10/16/18 09:00	1
Chloride	**20.0**		1.0		mg/L			10/15/18 18:04	1
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MWFP-2S
Date Collected: 10/10/18 10:11
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-8
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			10/16/18 14:49	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			10/16/18 14:49	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			10/16/18 14:49	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			10/16/18 14:49	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			10/16/18 14:49	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			10/16/18 14:49	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			10/16/18 14:49	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			10/16/18 14:49	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			10/16/18 14:49	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			10/16/18 14:49	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			10/16/18 14:49	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			10/16/18 14:49	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			10/16/18 14:49	2
2-Butanone (MEK)	ND		20	2.6	ug/L			10/16/18 14:49	2
2-Hexanone	ND		10	2.5	ug/L			10/16/18 14:49	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			10/16/18 14:49	2
Acetone	ND		20	6.0	ug/L			10/16/18 14:49	2
Bromodichloromethane	ND		2.0	0.78	ug/L			10/16/18 14:49	2
Bromoform	ND		2.0	0.52	ug/L			10/16/18 14:49	2
Bromomethane	ND		2.0	1.4	ug/L			10/16/18 14:49	2
Carbon disulfide	ND		2.0	0.38	ug/L			10/16/18 14:49	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			10/16/18 14:49	2
Chlorobenzene	ND		2.0	1.5	ug/L			10/16/18 14:49	2
Chloroethane	ND		2.0	0.64	ug/L			10/16/18 14:49	2
Chloroform	ND		2.0	0.68	ug/L			10/16/18 14:49	2
Chloromethane	ND		2.0	0.70	ug/L			10/16/18 14:49	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			10/16/18 14:49	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			10/16/18 14:49	2
Cyclohexane	ND		2.0	0.36	ug/L			10/16/18 14:49	2
Dibromochloromethane	ND		2.0	0.64	ug/L			10/16/18 14:49	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			10/16/18 14:49	2
Methyl acetate	ND		5.0	2.6	ug/L			10/16/18 14:49	2
Methylcyclohexane	ND		2.0	0.32	ug/L			10/16/18 14:49	2
Methylene Chloride	ND		2.0	0.88	ug/L			10/16/18 14:49	2
Styrene	ND		2.0	1.5	ug/L			10/16/18 14:49	2
Tetrachloroethene	ND		2.0	0.72	ug/L			10/16/18 14:49	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			10/16/18 14:49	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			10/16/18 14:49	2
Trichloroethene	ND		2.0	0.92	ug/L			10/16/18 14:49	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			10/16/18 14:49	2
Vinyl chloride	ND		2.0	1.8	ug/L			10/16/18 14:49	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*77 - 120*		*10/16/18 14:49*	*2*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*10/16/18 14:49*	*2*
Toluene-d8 (Surr)	*104*		*80 - 120*		*10/16/18 14:49*	*2*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*10/16/18 14:49*	*2*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MWFP-2S
Date Collected: 10/10/18 10:11
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-8
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 14:39	1
Chromium	**0.020**		0.0040		mg/L		10/12/18 08:33	10/12/18 14:39	1
Manganese	**0.37**		0.0030		mg/L		10/12/18 08:33	10/12/18 14:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1

Client Sample ID: MWFP-3S

Date Collected: 10/10/18 10:44
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-9

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	**2.9**		2.0	1.6	ug/L			10/16/18 15:16	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			10/16/18 15:16	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			10/16/18 15:16	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			10/16/18 15:16	2
1,1-Dichloroethane	**1.7**	**J**	2.0	0.76	ug/L			10/16/18 15:16	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			10/16/18 15:16	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			10/16/18 15:16	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			10/16/18 15:16	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			10/16/18 15:16	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			10/16/18 15:16	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			10/16/18 15:16	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			10/16/18 15:16	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			10/16/18 15:16	2
2-Butanone (MEK)	ND		20	2.6	ug/L			10/16/18 15:16	2
2-Hexanone	ND		10	2.5	ug/L			10/16/18 15:16	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			10/16/18 15:16	2
Acetone	ND		20	6.0	ug/L			10/16/18 15:16	2
Bromodichloromethane	ND		2.0	0.78	ug/L			10/16/18 15:16	2
Bromoform	ND		2.0	0.52	ug/L			10/16/18 15:16	2
Bromomethane	ND		2.0	1.4	ug/L			10/16/18 15:16	2
Carbon disulfide	ND		2.0	0.38	ug/L			10/16/18 15:16	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			10/16/18 15:16	2
Chlorobenzene	ND		2.0	1.5	ug/L			10/16/18 15:16	2
Chloroethane	ND		2.0	0.64	ug/L			10/16/18 15:16	2
Chloroform	**1.3**	**J**	2.0	0.68	ug/L			10/16/18 15:16	2
Chloromethane	ND		2.0	0.70	ug/L			10/16/18 15:16	2
cis-1,2-Dichloroethene	**8.1**		2.0	1.6	ug/L			10/16/18 15:16	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			10/16/18 15:16	2
Cyclohexane	ND		2.0	0.36	ug/L			10/16/18 15:16	2
Dibromochloromethane	ND		2.0	0.64	ug/L			10/16/18 15:16	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			10/16/18 15:16	2
Methyl acetate	ND		5.0	2.6	ug/L			10/16/18 15:16	2
Methylcyclohexane	ND		2.0	0.32	ug/L			10/16/18 15:16	2
Methylene Chloride	**1.4**	**J**	2.0	0.88	ug/L			10/16/18 15:16	2
Styrene	ND		2.0	1.5	ug/L			10/16/18 15:16	2
Tetrachloroethene	**8.5**		2.0	0.72	ug/L			10/16/18 15:16	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			10/16/18 15:16	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			10/16/18 15:16	2
Trichloroethene	**3.2**		2.0	0.92	ug/L			10/16/18 15:16	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			10/16/18 15:16	2
Vinyl chloride	ND		2.0	1.8	ug/L			10/16/18 15:16	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*10/16/18 15:16*	*2*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*10/16/18 15:16*	*2*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/16/18 15:16*	*2*
Dibromofluoromethane (Surr)	*111*		*75 - 123*		*10/16/18 15:16*	*2*

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MWFP-3S
Date Collected: 10/10/18 10:44
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-9
Matrix: Water

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 14:43	1
Chromium	**0.0065**		0.0040		mg/L		10/12/18 08:33	10/12/18 14:43	1
Manganese	**6.6**		0.0030		mg/L		10/12/18 08:33	10/12/18 14:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	**0.021**	**H**	0.010		mg/L			10/12/18 09:49	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: Trip Blank
Date Collected: 10/10/18 00:00
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-10
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 15:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 15:43	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 15:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 15:43	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 15:43	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 15:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 15:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 15:43	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 15:43	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 15:43	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 15:43	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 15:43	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 15:43	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 15:43	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 15:43	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/16/18 15:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 15:43	1
Acetone	ND		10	3.0	ug/L			10/16/18 15:43	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 15:43	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 15:43	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 15:43	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 15:43	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 15:43	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 15:43	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 15:43	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 15:43	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 15:43	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 15:43	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 15:43	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 15:43	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 15:43	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 15:43	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 15:43	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 15:43	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 15:43	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 15:43	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 15:43	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 15:43	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 15:43	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 15:43	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 15:43	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 15:43	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 15:43	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 15:43	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 15:43	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 15:43	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 15:43	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 15:43	1

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: Trip Blank
Date Collected: 10/10/18 00:00
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-10
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		10/16/18 15:43	1
Toluene-d8 (Surr)	104		80 - 120		10/16/18 15:43	1
4-Bromofluorobenzene (Surr)	100		73 - 120		10/16/18 15:43	1
Dibromofluoromethane (Surr)	112		75 - 123		10/16/18 15:43	1

Surrogate Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(77-120)	(80-120)	(73-120)	(75-123)
480-143191-1	Blind Duplicate	107	105	102	111
480-143191-2	MW-5S	105	103	99	113
480-143191-3	MW-7S	106	104	101	107
480-143191-4	MW-1SR	100	104	100	113
480-143191-5	SW-1	102	104	102	109
480-143191-5 MS	SW-1	107	104	99	105
480-143191-5 MSD	SW-1	97	100	89	103
480-143191-6	SW-2	106	101	97	113
480-143191-7	SW-3	100	103	97	106
480-143191-8	MWFP-2S	110	104	104	118
480-143191-9	MWFP-3S	108	100	97	111
480-143191-10	Trip Blank	101	104	100	112
LCS 480-439589/5	Lab Control Sample	101	104	102	110
LCS 480-439872/12	Lab Control Sample	99	103	96	103
MB 480-439589/7	Method Blank	103	103	98	106
MB 480-439872/7	Method Blank	107	106	94	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

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

Lab Sample ID: MB 480-439589/7
Matrix: Water
Analysis Batch: 439589

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/16/18 09:42	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/16/18 09:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/16/18 09:42	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/16/18 09:42	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/16/18 09:42	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/16/18 09:42	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/16/18 09:42	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/16/18 09:42	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/16/18 09:42	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/16/18 09:42	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/16/18 09:42	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/16/18 09:42	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/16/18 09:42	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/16/18 09:42	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/16/18 09:42	1
2-Hexanone	ND		5.0	1.2	ug/L			10/16/18 09:42	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/16/18 09:42	1
Acetone	ND		10	3.0	ug/L			10/16/18 09:42	1
Benzene	ND		1.0	0.41	ug/L			10/16/18 09:42	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/16/18 09:42	1
Bromoform	ND		1.0	0.26	ug/L			10/16/18 09:42	1
Bromomethane	ND		1.0	0.69	ug/L			10/16/18 09:42	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/16/18 09:42	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/16/18 09:42	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/16/18 09:42	1
Chloroethane	ND		1.0	0.32	ug/L			10/16/18 09:42	1
Chloroform	ND		1.0	0.34	ug/L			10/16/18 09:42	1
Chloromethane	ND		1.0	0.35	ug/L			10/16/18 09:42	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/16/18 09:42	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/16/18 09:42	1
Cyclohexane	ND		1.0	0.18	ug/L			10/16/18 09:42	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/16/18 09:42	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/16/18 09:42	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/16/18 09:42	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/16/18 09:42	1
Methyl acetate	ND		2.5	1.3	ug/L			10/16/18 09:42	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/16/18 09:42	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/16/18 09:42	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/16/18 09:42	1
Styrene	ND		1.0	0.73	ug/L			10/16/18 09:42	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/16/18 09:42	1
Toluene	ND		1.0	0.51	ug/L			10/16/18 09:42	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/16/18 09:42	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/16/18 09:42	1
Trichloroethene	ND		1.0	0.46	ug/L			10/16/18 09:42	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/16/18 09:42	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/16/18 09:42	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/16/18 09:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*		*10/16/18 09:42*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/16/18 09:42*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*10/16/18 09:42*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*10/16/18 09:42*	*1*

Lab Sample ID: LCS 480-439589/5
Matrix: Water
Analysis Batch: 439589

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	26.5		ug/L		106	73 - 126
1,1,2,2-Tetrachloroethane	25.0	24.4		ug/L		98	76 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	24.6		ug/L		98	61 - 148
1,1,2-Trichloroethane	25.0	25.3		ug/L		101	76 - 122
1,1-Dichloroethane	25.0	26.1		ug/L		104	77 - 120
1,1-Dichloroethene	25.0	26.2		ug/L		105	66 - 127
1,2,4-Trichlorobenzene	25.0	21.3		ug/L		85	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	22.8		ug/L		91	56 - 134
1,2-Dibromoethane	25.0	26.2		ug/L		105	77 - 120
1,2-Dichlorobenzene	25.0	24.5		ug/L		98	80 - 124
1,2-Dichloroethane	25.0	23.6		ug/L		95	75 - 120
1,2-Dichloropropane	25.0	27.3		ug/L		109	76 - 120
1,3-Dichlorobenzene	25.0	23.9		ug/L		96	77 - 120
1,4-Dichlorobenzene	25.0	24.3		ug/L		97	80 - 120
2-Butanone (MEK)	125	121		ug/L		97	57 - 140
2-Hexanone	125	123		ug/L		99	65 - 127
4-Methyl-2-pentanone (MIBK)	125	121		ug/L		97	71 - 125
Acetone	125	124		ug/L		99	56 - 142
Benzene	25.0	24.9		ug/L		100	71 - 124
Bromodichloromethane	25.0	25.3		ug/L		101	80 - 122
Bromoform	25.0	26.0		ug/L		104	61 - 132
Bromomethane	25.0	34.7		ug/L		139	55 - 144
Carbon disulfide	25.0	25.9		ug/L		104	59 - 134
Carbon tetrachloride	25.0	28.0		ug/L		112	72 - 134
Chlorobenzene	25.0	25.5		ug/L		102	80 - 120
Chloroethane	25.0	29.3		ug/L		117	69 - 136
Chloroform	25.0	24.9		ug/L		100	73 - 127
Chloromethane	25.0	24.1		ug/L		96	68 - 124
cis-1,2-Dichloroethene	25.0	26.5		ug/L		106	74 - 124
cis-1,3-Dichloropropene	25.0	25.9		ug/L		104	74 - 124
Cyclohexane	25.0	23.5		ug/L		94	59 - 135
Dibromochloromethane	25.0	29.8		ug/L		119	75 - 125
Dichlorodifluoromethane	25.0	22.9		ug/L		91	59 - 135
Ethylbenzene	25.0	23.4		ug/L		94	77 - 123
Isopropylbenzene	25.0	22.1		ug/L		89	77 - 122
Methyl acetate	50.0	46.4		ug/L		93	74 - 133
Methyl tert-butyl ether	25.0	26.4		ug/L		105	77 - 120
Methylcyclohexane	25.0	24.1		ug/L		96	68 - 134
Methylene Chloride	25.0	26.9		ug/L		108	75 - 124
Styrene	25.0	24.5		ug/L		98	80 - 120
Tetrachloroethene	25.0	24.9		ug/L		100	74 - 122
Toluene	25.0	24.6		ug/L		99	80 - 122
trans-1,2-Dichloroethene	25.0	26.8		ug/L		107	73 - 127

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

Lab Sample ID: LCS 480-439589/5
Matrix: Water
Analysis Batch: 439589

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,3-Dichloropropene	25.0	24.1		ug/L		96	80 - 120
Trichloroethene	25.0	25.5		ug/L		102	74 - 123
Trichlorofluoromethane	25.0	34.9		ug/L		140	62 - 150
Vinyl chloride	25.0	28.7		ug/L		115	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*
Dibromofluoromethane (Surr)	*110*		*75 - 123*

Lab Sample ID: MB 480-439872/7
Matrix: Water
Analysis Batch: 439872

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			10/17/18 13:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/17/18 13:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			10/17/18 13:00	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			10/17/18 13:00	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			10/17/18 13:00	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			10/17/18 13:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			10/17/18 13:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			10/17/18 13:00	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			10/17/18 13:00	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			10/17/18 13:00	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			10/17/18 13:00	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			10/17/18 13:00	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			10/17/18 13:00	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			10/17/18 13:00	1
2-Butanone (MEK)	ND		10	1.3	ug/L			10/17/18 13:00	1
2-Hexanone	ND		5.0	1.2	ug/L			10/17/18 13:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			10/17/18 13:00	1
Acetone	ND		10	3.0	ug/L			10/17/18 13:00	1
Benzene	ND		1.0	0.41	ug/L			10/17/18 13:00	1
Bromodichloromethane	ND		1.0	0.39	ug/L			10/17/18 13:00	1
Bromoform	ND		1.0	0.26	ug/L			10/17/18 13:00	1
Bromomethane	ND		1.0	0.69	ug/L			10/17/18 13:00	1
Carbon disulfide	ND		1.0	0.19	ug/L			10/17/18 13:00	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			10/17/18 13:00	1
Chlorobenzene	ND		1.0	0.75	ug/L			10/17/18 13:00	1
Chloroethane	ND		1.0	0.32	ug/L			10/17/18 13:00	1
Chloroform	ND		1.0	0.34	ug/L			10/17/18 13:00	1
Chloromethane	ND		1.0	0.35	ug/L			10/17/18 13:00	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			10/17/18 13:00	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			10/17/18 13:00	1
Cyclohexane	ND		1.0	0.18	ug/L			10/17/18 13:00	1
Dibromochloromethane	ND		1.0	0.32	ug/L			10/17/18 13:00	1

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

Lab Sample ID: MB 480-439872/7
Matrix: Water
Analysis Batch: 439872

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			10/17/18 13:00	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/17/18 13:00	1
Isopropylbenzene	ND		1.0	0.79	ug/L			10/17/18 13:00	1
Methyl acetate	ND		2.5	1.3	ug/L			10/17/18 13:00	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			10/17/18 13:00	1
Methylcyclohexane	ND		1.0	0.16	ug/L			10/17/18 13:00	1
Methylene Chloride	ND		1.0	0.44	ug/L			10/17/18 13:00	1
Styrene	ND		1.0	0.73	ug/L			10/17/18 13:00	1
Tetrachloroethene	ND		1.0	0.36	ug/L			10/17/18 13:00	1
Toluene	ND		1.0	0.51	ug/L			10/17/18 13:00	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			10/17/18 13:00	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			10/17/18 13:00	1
Trichloroethene	ND		1.0	0.46	ug/L			10/17/18 13:00	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			10/17/18 13:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			10/17/18 13:00	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/17/18 13:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*10/17/18 13:00*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*10/17/18 13:00*	*1*
4-Bromofluorobenzene (Surr)	*94*		*73 - 120*		*10/17/18 13:00*	*1*
Dibromofluoromethane (Surr)	*107*		*75 - 123*		*10/17/18 13:00*	*1*

Lab Sample ID: LCS 480-439872/12
Matrix: Water
Analysis Batch: 439872

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	27.7		ug/L		111	73 - 126
1,1,2,2-Tetrachloroethane	25.0	24.8		ug/L		99	76 - 120
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	32.6		ug/L		130	61 - 148
1,1,2-Trichloroethane	25.0	26.6		ug/L		106	76 - 122
1,1-Dichloroethane	25.0	25.7		ug/L		103	77 - 120
1,1-Dichloroethene	25.0	27.2		ug/L		109	66 - 127
1,2,4-Trichlorobenzene	25.0	26.0		ug/L		104	79 - 122
1,2-Dibromo-3-Chloropropane	25.0	19.5		ug/L		78	56 - 134
1,2-Dibromoethane	25.0	24.8		ug/L		99	77 - 120
1,2-Dichlorobenzene	25.0	25.9		ug/L		104	80 - 124
1,2-Dichloroethane	25.0	25.2		ug/L		101	75 - 120
1,2-Dichloropropane	25.0	27.5		ug/L		110	76 - 120
1,3-Dichlorobenzene	25.0	24.4		ug/L		98	77 - 120
1,4-Dichlorobenzene	25.0	25.6		ug/L		103	80 - 120
2-Butanone (MEK)	125	119		ug/L		95	57 - 140
2-Hexanone	125	129		ug/L		103	65 - 127
4-Methyl-2-pentanone (MIBK)	125	124		ug/L		99	71 - 125
Acetone	125	126		ug/L		101	56 - 142
Benzene	25.0	26.3		ug/L		105	71 - 124

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

Lab Sample ID: LCS 480-439872/12
Matrix: Water
Analysis Batch: 439872

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromodichloromethane	25.0	25.8		ug/L		103	80 - 122
Bromoform	25.0	22.9		ug/L		92	61 - 132
Bromomethane	25.0	24.1		ug/L		96	55 - 144
Carbon disulfide	25.0	28.1		ug/L		112	59 - 134
Carbon tetrachloride	25.0	29.8		ug/L		119	72 - 134
Chlorobenzene	25.0	25.8		ug/L		103	80 - 120
Chloroethane	25.0	24.8		ug/L		99	69 - 136
Chloroform	25.0	24.1		ug/L		96	73 - 127
Chloromethane	25.0	23.5		ug/L		94	68 - 124
cis-1,2-Dichloroethene	25.0	27.2		ug/L		109	74 - 124
cis-1,3-Dichloropropene	25.0	25.8		ug/L		103	74 - 124
Cyclohexane	25.0	30.5		ug/L		122	59 - 135
Dibromochloromethane	25.0	25.0		ug/L		100	75 - 125
Dichlorodifluoromethane	25.0	22.8		ug/L		91	59 - 135
Ethylbenzene	25.0	27.8		ug/L		111	77 - 123
Isopropylbenzene	25.0	28.5		ug/L		114	77 - 122
Methyl acetate	50.0	47.2		ug/L		94	74 - 133
Methyl tert-butyl ether	25.0	24.7		ug/L		99	77 - 120
Methylcyclohexane	25.0	28.6		ug/L		114	68 - 134
Methylene Chloride	25.0	27.5		ug/L		110	75 - 124
Styrene	25.0	28.3		ug/L		113	80 - 120
Tetrachloroethene	25.0	29.0		ug/L		116	74 - 122
Toluene	25.0	26.7		ug/L		107	80 - 122
trans-1,2-Dichloroethene	25.0	25.9		ug/L		104	73 - 127
trans-1,3-Dichloropropene	25.0	26.3		ug/L		105	80 - 120
Trichloroethene	25.0	29.2		ug/L		117	74 - 123
Trichlorofluoromethane	25.0	26.9		ug/L		108	62 - 150
Vinyl chloride	25.0	24.2		ug/L		97	65 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*73 - 120*
Dibromofluoromethane (Surr)	*103*		*75 - 123*

Lab Sample ID: 480-143191-5 MS
Matrix: Water
Analysis Batch: 439872

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND	F1 F2	25.0	36.7	F1	ug/L		147	73 - 126
1,1,2,2-Tetrachloroethane	ND	F1 F2	25.0	28.1		ug/L		112	76 - 120
1,1,2-Trichloroethane	ND	F1 F2	25.0	33.9	F1	ug/L		136	76 - 122
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F1 F2	25.0	36.2		ug/L		145	61 - 148
1,1-Dichloroethane	ND	F1 F2	25.0	32.0	F1	ug/L		128	77 - 120
1,1-Dichloroethene	ND	F1 F2	25.0	36.8	F1	ug/L		147	66 - 127
1,2,4-Trichlorobenzene	ND	F1 F2	25.0	31.2	F1	ug/L		125	79 - 122

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

Lab Sample ID: 480-143191-5 MS
Matrix: Water
Analysis Batch: 439872

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	ND	F1 F2	25.0	24.6		ug/L		98	56 - 134
1,2-Dibromoethane	ND	F1 F2	25.0	28.7		ug/L		115	77 - 120
1,2-Dichlorobenzene	ND	F1 F2	25.0	30.2		ug/L		121	80 - 124
1,2-Dichloroethane	ND	F1 F2	25.0	30.8	F1	ug/L		123	75 - 120
1,2-Dichloropropane	ND	F1 F2	25.0	32.2	F1	ug/L		129	76 - 120
1,3-Dichlorobenzene	ND	F1 F2	25.0	31.3	F1	ug/L		125	77 - 120
1,4-Dichlorobenzene	ND	F1	25.0	29.0		ug/L		116	78 - 124
2-Hexanone	ND	F1 F2	125	151		ug/L		121	65 - 127
2-Butanone (MEK)	ND	F1 F2	125	146		ug/L		117	57 - 140
4-Methyl-2-pentanone (MIBK)	ND	F1 F2	125	152		ug/L		122	71 - 125
Acetone	ND	F1 F2	125	141		ug/L		113	56 - 142
Benzene	ND	F1 F2	25.0	33.8	F1	ug/L		135	71 - 124
Bromodichloromethane	ND	F1 F2	25.0	31.5	F1	ug/L		126	80 - 122
Bromoform	ND	F1 F2	25.0	28.5		ug/L		114	61 - 132
Bromomethane	ND	F1 F2	25.0	28.2		ug/L		113	55 - 144
Carbon disulfide	ND	F1 F2	25.0	31.5		ug/L		126	59 - 134
Carbon tetrachloride	ND	F1 F2	25.0	36.6	F1	ug/L		147	72 - 134
Chlorobenzene	ND	F1 F2	25.0	30.6	F1	ug/L		123	80 - 120
Dibromochloromethane	ND	F1 F2	25.0	29.9		ug/L		120	75 - 125
Chloroethane	ND	F1 F2	25.0	29.9		ug/L		120	69 - 136
Chloroform	ND	F1 F2	25.0	30.8		ug/L		123	73 - 127
Chloromethane	ND	F1 F2	25.0	27.9		ug/L		112	68 - 124
cis-1,2-Dichloroethene	ND	F1 F2	25.0	31.9	F1	ug/L		128	74 - 124
cis-1,3-Dichloropropene	ND	F1 F2	25.0	30.9		ug/L		123	74 - 124
Cyclohexane	ND	F1 F2	25.0	37.6	F1	ug/L		150	59 - 135
Dichlorodifluoromethane	ND	F1 F2	25.0	29.9		ug/L		120	59 - 135
Ethylbenzene	ND	F1 F2	25.0	32.7	F1	ug/L		131	77 - 123
Isopropylbenzene	ND	F1	25.0	33.2	F1	ug/L		133	77 - 122
Methyl acetate	ND	F1 F2	50.0	53.7		ug/L		107	74 - 133
Methyl tert-butyl ether	ND	F1 F2	25.0	29.9		ug/L		120	77 - 120
Methylcyclohexane	ND	F1 F2	25.0	32.6		ug/L		130	68 - 134
Methylene Chloride	ND	F1 F2	25.0	31.5	F1	ug/L		126	75 - 124
Styrene	ND	F1 F2	25.0	32.3	F1	ug/L		129	80 - 120
Tetrachloroethene	ND	F1 F2	25.0	33.7	F1	ug/L		135	74 - 122
Toluene	ND	F1 F2	25.0	32.0	F1	ug/L		128	80 - 122
trans-1,2-Dichloroethene	ND	F1 F2	25.0	31.9	F1	ug/L		128	73 - 127
trans-1,3-Dichloropropene	ND	F1 F2	25.0	29.9		ug/L		120	80 - 120
Trichloroethene	ND	F1 F2	25.0	35.0	F1	ug/L		140	74 - 123
Trichlorofluoromethane	ND	F1 F2	25.0	32.1		ug/L		129	62 - 150
Vinyl chloride	ND	F1 F2	25.0	28.7		ug/L		115	65 - 133

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*
Dibromofluoromethane (Surr)	*105*		*75 - 123*

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

Lab Sample ID: 480-143191-5 MSD
Matrix: Water
Analysis Batch: 439872

Client Sample ID: SW-1
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 F2	25.0	33.3	F1	ug/L		133	73 - 126	10	15
1,1,2,2-Tetrachloroethane	ND	F1 F2	25.0	28.4		ug/L		113	76 - 120	1	15
1,1,2-Trichloroethane	ND	F1 F2	25.0	29.7		ug/L		119	76 - 122	13	15
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	F1 F2	25.0	35.1		ug/L		140	61 - 148	3	20
1,1-Dichloroethane	ND	F1 F2	25.0	29.0		ug/L		116	77 - 120	10	20
1,1-Dichloroethene	ND	F1 F2	25.0	35.3	F1	ug/L		141	66 - 127	4	16
1,2,4-Trichlorobenzene	ND	F1 F2	25.0	28.3		ug/L		113	79 - 122	10	20
1,2-Dibromo-3-Chloropropane	ND	F1 F2	25.0	24.4		ug/L		98	56 - 134	1	15
1,2-Dibromoethane	ND	F1 F2	25.0	27.9		ug/L		112	77 - 120	3	15
1,2-Dichlorobenzene	ND	F1 F2	25.0	29.9		ug/L		120	80 - 124	1	20
1,2-Dichloroethane	ND	F1 F2	25.0	29.1		ug/L		117	75 - 120	5	20
1,2-Dichloropropane	ND	F1 F2	25.0	30.1		ug/L		120	76 - 120	7	20
1,3-Dichlorobenzene	ND	F1 F2	25.0	29.2		ug/L		117	77 - 120	7	20
1,4-Dichlorobenzene	ND	F1	25.0	29.1		ug/L		116	78 - 124	0	20
2-Hexanone	ND	F1 F2	125	142		ug/L		114	65 - 127	6	15
2-Butanone (MEK)	ND	F1 F2	125	130		ug/L		104	57 - 140	12	20
4-Methyl-2-pentanone (MIBK)	ND	F1 F2	125	145		ug/L		116	71 - 125	5	35
Acetone	ND	F1 F2	125	120	F2	ug/L		96	56 - 142	16	15
Benzene	ND	F1 F2	25.0	31.2	F1	ug/L		125	71 - 124	8	13
Bromodichloromethane	ND	F1 F2	25.0	29.1		ug/L		117	80 - 122	8	15
Bromoform	ND	F1 F2	25.0	26.4		ug/L		105	61 - 132	8	15
Bromomethane	ND	F1 F2	25.0	25.4		ug/L		101	55 - 144	11	15
Carbon disulfide	ND	F1 F2	25.0	30.3		ug/L		121	59 - 134	4	15
Carbon tetrachloride	ND	F1 F2	25.0	34.5	F1	ug/L		138	72 - 134	6	15
Chlorobenzene	ND	F1 F2	25.0	29.0		ug/L		116	80 - 120	5	25
Dibromochloromethane	ND	F1 F2	25.0	29.6		ug/L		118	75 - 125	1	15
Chloroethane	ND	F1 F2	25.0	28.1		ug/L		112	69 - 136	6	15
Chloroform	ND	F1 F2	25.0	29.2		ug/L		117	73 - 127	5	20
Chloromethane	ND	F1 F2	25.0	26.6		ug/L		106	68 - 124	5	15
cis-1,2-Dichloroethene	ND	F1 F2	25.0	30.6		ug/L		122	74 - 124	4	15
cis-1,3-Dichloropropene	ND	F1 F2	25.0	28.8		ug/L		115	74 - 124	7	15
Cyclohexane	ND	F1 F2	25.0	35.5	F1	ug/L		142	59 - 135	6	20
Dichlorodifluoromethane	ND	F1 F2	25.0	27.9		ug/L		112	59 - 135	7	20
Ethylbenzene	ND	F1 F2	25.0	30.5		ug/L		122	77 - 123	7	15
Isopropylbenzene	ND	F1	25.0	31.8	F1	ug/L		127	77 - 122	4	20
Methyl acetate	ND	F1 F2	50.0	47.8		ug/L		96	74 - 133	12	20
Methyl tert-butyl ether	ND	F1 F2	25.0	27.8		ug/L		111	77 - 120	7	37
Methylcyclohexane	ND	F1 F2	25.0	30.0		ug/L		120	68 - 134	8	20
Methylene Chloride	ND	F1 F2	25.0	29.4		ug/L		117	75 - 124	7	15
Styrene	ND	F1 F2	25.0	30.9	F1	ug/L		124	80 - 120	4	20
Tetrachloroethene	ND	F1 F2	25.0	31.9	F1	ug/L		128	74 - 122	5	20
Toluene	ND	F1 F2	25.0	30.1		ug/L		120	80 - 122	6	15
trans-1,2-Dichloroethene	ND	F1 F2	25.0	31.1		ug/L		124	73 - 127	3	20
trans-1,3-Dichloropropene	ND	F1 F2	25.0	28.9		ug/L		116	80 - 120	4	15
Trichloroethene	ND	F1 F2	25.0	32.8	F1	ug/L		131	74 - 123	6	16
Trichlorofluoromethane	ND	F1 F2	25.0	29.9		ug/L		120	62 - 150	7	20
Vinyl chloride	ND	F1 F2	25.0	27.7		ug/L		111	65 - 133	3	15

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

Lab Sample ID: 480-143191-5 MSD
Matrix: Water
Analysis Batch: 439872

Client Sample ID: SW-1
Prep Type: Total/NA

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*89*		*73 - 120*
Dibromofluoromethane (Surr)	*103*		*75 - 123*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-438980/1-A
Matrix: Water
Analysis Batch: 439203

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 438980

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		10/12/18 08:33	10/12/18 13:40	1
Chromium	ND		0.0040		mg/L		10/12/18 08:33	10/12/18 13:40	1
Manganese	ND		0.0030		mg/L		10/12/18 08:33	10/12/18 13:40	1

Lab Sample ID: LCS 480-438980/2-A
Matrix: Water
Analysis Batch: 439203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 438980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.200	0.200		mg/L		100	80 - 120
Chromium	0.200	0.201		mg/L		101	80 - 120
Manganese	0.200	0.200		mg/L		100	80 - 120

Lab Sample ID: 480-143191-5 MS
Matrix: Water
Analysis Batch: 439203

Client Sample ID: SW-1
Prep Type: Total/NA
Prep Batch: 438980

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		0.200	0.202		mg/L		101	75 - 125
Chromium	ND		0.200	0.198		mg/L		97	75 - 125
Manganese	0.052		0.200	0.244		mg/L		96	75 - 125

Lab Sample ID: 480-143191-5 MSD
Matrix: Water
Analysis Batch: 439203

Client Sample ID: SW-1
Prep Type: Total/NA
Prep Batch: 438980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		0.200	0.201		mg/L		101	75 - 125	0	20
Chromium	ND		0.200	0.201		mg/L		98	75 - 125	2	20
Manganese	0.052		0.200	0.245		mg/L		96	75 - 125	0	20

Lab Sample ID: MB 480-439299/1-B
Matrix: Water
Analysis Batch: 439678

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 439436

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic, Dissolved	ND		0.015		mg/L		10/15/18 12:08	10/16/18 09:26	1

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

Lab Sample ID: MB 480-439299/1-B
Matrix: Water
Analysis Batch: 439678

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 439436

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, Dissolved	ND		0.0040		mg/L		10/15/18 12:08	10/16/18 09:26	1
Manganese, Dissolved	ND		0.0030		mg/L		10/15/18 12:08	10/16/18 09:26	1

Lab Sample ID: LCS 480-439299/2-B
Matrix: Water
Analysis Batch: 439678

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 439436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	0.200	0.200		mg/L		100	80 - 120
Chromium, Dissolved	0.200	0.203		mg/L		102	80 - 120
Manganese, Dissolved	0.200	0.201		mg/L		100	80 - 120

Lab Sample ID: 480-143191-5 MS
Matrix: Water
Analysis Batch: 439678

Client Sample ID: SW-1
Prep Type: Dissolved
Prep Batch: 439436

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic, Dissolved	ND		0.200	0.202		mg/L		101	75 - 125
Chromium, Dissolved	ND		0.200	0.199		mg/L		100	75 - 125
Manganese, Dissolved	ND		0.200	0.199		mg/L		98	75 - 125

Lab Sample ID: 480-143191-5 MSD
Matrix: Water
Analysis Batch: 439678

Client Sample ID: SW-1
Prep Type: Dissolved
Prep Batch: 439436

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic, Dissolved	ND		0.200	0.199		mg/L		100	75 - 125	1	20
Chromium, Dissolved	ND		0.200	0.196		mg/L		98	75 - 125	1	20
Manganese, Dissolved	ND		0.200	0.197		mg/L		97	75 - 125	1	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-439301/3
Matrix: Water
Analysis Batch: 439301

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.020		mg/L			10/13/18 12:37	1

Lab Sample ID: LCS 480-439301/4
Matrix: Water
Analysis Batch: 439301

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	1.00	1.03		mg/L		103	90 - 110

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-438938/3
Matrix: Water
Analysis Batch: 438938

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			10/11/18 08:10	1

Lab Sample ID: LCS 480-438938/4
Matrix: Water
Analysis Batch: 438938

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	0.0500	0.0527		mg/L		105	85 - 115

Lab Sample ID: 480-143191-1 MS
Matrix: Water
Analysis Batch: 438938

Client Sample ID: Blind Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	ND		0.0500	0.0464		mg/L		93	85 - 115

Lab Sample ID: 480-143191-5 MS
Matrix: Water
Analysis Batch: 438938

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	ND		0.0500	0.0502		mg/L		100	85 - 115

Lab Sample ID: 480-143191-5 MSD
Matrix: Water
Analysis Batch: 438938

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium (hexavalent)	ND		0.0500	0.0577		mg/L		115	85 - 115	14	20

Lab Sample ID: 480-143191-7 DU
Matrix: Water
Analysis Batch: 438938

Client Sample ID: SW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chromium (hexavalent)	ND		ND		mg/L		NC	20

Lab Sample ID: MB 480-439145/27
Matrix: Water
Analysis Batch: 439145

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			10/12/18 09:49	1

Lab Sample ID: MB 480-439145/3
Matrix: Water
Analysis Batch: 439145

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium (hexavalent)	ND		0.010		mg/L			10/12/18 09:49	1

Lab Sample ID: LCS 480-439145/28
Matrix: Water
Analysis Batch: 439145

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	0.0500	0.0490		mg/L		98	85 - 115

Lab Sample ID: LCS 480-439145/4
Matrix: Water
Analysis Batch: 439145

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium (hexavalent)	0.0500	0.0452		mg/L		90	85 - 115

Method: SM 2340C - Hardness, Total (mg/l as CaC03)

Lab Sample ID: MB 480-439710/27
Matrix: Water
Analysis Batch: 439710

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	ND		2.0		mg/L			10/16/18 09:00	1

Lab Sample ID: LCS 480-439710/28
Matrix: Water
Analysis Batch: 439710

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hardness as calcium carbonate	227	216.0		mg/L		95	90 - 110

Lab Sample ID: 480-143191-5 DU
Matrix: Water
Analysis Batch: 439710

Client Sample ID: SW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Hardness as calcium carbonate	152		148.0		mg/L		3	15

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 480-439569/51
Matrix: Water
Analysis Batch: 439569

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0		mg/L			10/15/18 17:34	1

Lab Sample ID: MB 480-439569/74
Matrix: Water
Analysis Batch: 439569

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0		mg/L			10/15/18 17:57	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: LCS 480-439569/52
Matrix: Water
Analysis Batch: 439569

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	24.99		mg/L		100	90 - 110

Lab Sample ID: LCS 480-439569/75
Matrix: Water
Analysis Batch: 439569

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.33		mg/L		101	90 - 110

Lab Sample ID: 480-143191-2 MS
Matrix: Water
Analysis Batch: 439569

Client Sample ID: MW-5S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	11.5		20.0	30.16		mg/L		93	74 - 131

Lab Sample ID: 480-143191-2 MSD
Matrix: Water
Analysis Batch: 439569

Client Sample ID: MW-5S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	11.5		20.0	30.29		mg/L		94	74 - 131	0	20

Method: SM 4500 S2 F - Sulfide, Total

Lab Sample ID: MB 480-439148/3
Matrix: Water
Analysis Batch: 439148

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		1.0		mg/L			10/12/18 09:32	1

Lab Sample ID: LCS 480-439148/4
Matrix: Water
Analysis Batch: 439148

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	8.80	8.80		mg/L		100	90 - 110

Lab Sample ID: 480-143191-3 MS
Matrix: Water
Analysis Batch: 439148

Client Sample ID: MW-7S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND		2.30	2.00		mg/L		87	40 - 150

Method: SM 4500 S2 F - Sulfide, Total (Continued)

Lab Sample ID: 480-143191-2 DU
Matrix: Water
Analysis Batch: 439148

Client Sample ID: MW-5S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Sulfide	ND			ND		mg/L				NC	20

GC/MS VOA

Analysis Batch: 439589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-1	Blind Duplicate	Total/NA	Water	8260C	
480-143191-2	MW-5S	Total/NA	Water	8260C	
480-143191-3	MW-7S	Total/NA	Water	8260C	
480-143191-4	MW-1SR	Total/NA	Water	8260C	
480-143191-5	SW-1	Total/NA	Water	8260C	
480-143191-6	SW-2	Total/NA	Water	8260C	
480-143191-7	SW-3	Total/NA	Water	8260C	
480-143191-8	MWFP-2S	Total/NA	Water	8260C	
480-143191-9	MWFP-3S	Total/NA	Water	8260C	
480-143191-10	Trip Blank	Total/NA	Water	8260C	
MB 480-439589/7	Method Blank	Total/NA	Water	8260C	
LCS 480-439589/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 439872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-439872/7	Method Blank	Total/NA	Water	8260C	
LCS 480-439872/12	Lab Control Sample	Total/NA	Water	8260C	
480-143191-5 MS	SW-1	Total/NA	Water	8260C	
480-143191-5 MSD	SW-1	Total/NA	Water	8260C	

Metals

Prep Batch: 438980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-1	Blind Duplicate	Total/NA	Water	3005A	
480-143191-2	MW-5S	Total/NA	Water	3005A	
480-143191-3	MW-7S	Total/NA	Water	3005A	
480-143191-4	MW-1SR	Total/NA	Water	3005A	
480-143191-5	SW-1	Total/NA	Water	3005A	
480-143191-6	SW-2	Total/NA	Water	3005A	
480-143191-7	SW-3	Total/NA	Water	3005A	
480-143191-8	MWFP-2S	Total/NA	Water	3005A	
480-143191-9	MWFP-3S	Total/NA	Water	3005A	
MB 480-438980/1-A	Method Blank	Total/NA	Water	3005A	
LCS 480-438980/2-A	Lab Control Sample	Total/NA	Water	3005A	
480-143191-5 MS	SW-1	Total/NA	Water	3005A	
480-143191-5 MSD	SW-1	Total/NA	Water	3005A	

Analysis Batch: 439203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-1	Blind Duplicate	Total/NA	Water	6010C	438980
480-143191-2	MW-5S	Total/NA	Water	6010C	438980
480-143191-3	MW-7S	Total/NA	Water	6010C	438980
480-143191-4	MW-1SR	Total/NA	Water	6010C	438980
480-143191-5	SW-1	Total/NA	Water	6010C	438980
480-143191-6	SW-2	Total/NA	Water	6010C	438980
480-143191-7	SW-3	Total/NA	Water	6010C	438980
480-143191-8	MWFP-2S	Total/NA	Water	6010C	438980
480-143191-9	MWFP-3S	Total/NA	Water	6010C	438980
MB 480-438980/1-A	Method Blank	Total/NA	Water	6010C	438980

Metals (Continued)

Analysis Batch: 439203 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-438980/2-A	Lab Control Sample	Total/NA	Water	6010C	438980
480-143191-5 MS	SW-1	Total/NA	Water	6010C	438980
480-143191-5 MSD	SW-1	Total/NA	Water	6010C	438980

Filtration Batch: 439299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-5	SW-1	Dissolved	Water	FILTRATION	
480-143191-6	SW-2	Dissolved	Water	FILTRATION	
480-143191-7	SW-3	Dissolved	Water	FILTRATION	
MB 480-439299/1-B	Method Blank	Dissolved	Water	FILTRATION	
LCS 480-439299/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
480-143191-5 MS	SW-1	Dissolved	Water	FILTRATION	
480-143191-5 MSD	SW-1	Dissolved	Water	FILTRATION	

Prep Batch: 439436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-5	SW-1	Dissolved	Water	3005A	439299
480-143191-6	SW-2	Dissolved	Water	3005A	439299
480-143191-7	SW-3	Dissolved	Water	3005A	439299
MB 480-439299/1-B	Method Blank	Dissolved	Water	3005A	439299
LCS 480-439299/2-B	Lab Control Sample	Dissolved	Water	3005A	439299
480-143191-5 MS	SW-1	Dissolved	Water	3005A	439299
480-143191-5 MSD	SW-1	Dissolved	Water	3005A	439299

Analysis Batch: 439678

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-5	SW-1	Dissolved	Water	6010C	439436
480-143191-6	SW-2	Dissolved	Water	6010C	439436
480-143191-7	SW-3	Dissolved	Water	6010C	439436
MB 480-439299/1-B	Method Blank	Dissolved	Water	6010C	439436
LCS 480-439299/2-B	Lab Control Sample	Dissolved	Water	6010C	439436
480-143191-5 MS	SW-1	Dissolved	Water	6010C	439436
480-143191-5 MSD	SW-1	Dissolved	Water	6010C	439436

General Chemistry

Analysis Batch: 438938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-1	Blind Duplicate	Total/NA	Water	7196A	
480-143191-2	MW-5S	Total/NA	Water	7196A	
480-143191-3	MW-7S	Total/NA	Water	7196A	
480-143191-4	MW-1SR	Total/NA	Water	7196A	
480-143191-5	SW-1	Total/NA	Water	7196A	
480-143191-6	SW-2	Total/NA	Water	7196A	
480-143191-7	SW-3	Total/NA	Water	7196A	
480-143191-8	MWFP-2S	Total/NA	Water	7196A	
MB 480-438938/3	Method Blank	Total/NA	Water	7196A	
LCS 480-438938/4	Lab Control Sample	Total/NA	Water	7196A	
480-143191-1 MS	Blind Duplicate	Total/NA	Water	7196A	
480-143191-5 MS	SW-1	Total/NA	Water	7196A	

General Chemistry (Continued)

Analysis Batch: 438938 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-5 MSD	SW-1	Total/NA	Water	7196A	
480-143191-7 DU	SW-3	Total/NA	Water	7196A	

Analysis Batch: 439145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-9	MWFP-3S	Total/NA	Water	7196A	
MB 480-439145/27	Method Blank	Total/NA	Water	7196A	
MB 480-439145/3	Method Blank	Total/NA	Water	7196A	
LCS 480-439145/28	Lab Control Sample	Total/NA	Water	7196A	
LCS 480-439145/4	Lab Control Sample	Total/NA	Water	7196A	

Analysis Batch: 439148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-2	MW-5S	Total/NA	Water	SM 4500 S2 F	
480-143191-3	MW-7S	Total/NA	Water	SM 4500 S2 F	
480-143191-4	MW-1SR	Total/NA	Water	SM 4500 S2 F	
480-143191-5	SW-1	Total/NA	Water	SM 4500 S2 F	
480-143191-6	SW-2	Total/NA	Water	SM 4500 S2 F	
480-143191-7	SW-3	Total/NA	Water	SM 4500 S2 F	
MB 480-439148/3	Method Blank	Total/NA	Water	SM 4500 S2 F	
LCS 480-439148/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 F	
480-143191-3 MS	MW-7S	Total/NA	Water	SM 4500 S2 F	
480-143191-2 DU	MW-5S	Total/NA	Water	SM 4500 S2 F	

Analysis Batch: 439301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-2	MW-5S	Total/NA	Water	350.1	
480-143191-3	MW-7S	Total/NA	Water	350.1	
480-143191-4	MW-1SR	Total/NA	Water	350.1	
480-143191-5	SW-1	Total/NA	Water	350.1	
480-143191-6	SW-2	Total/NA	Water	350.1	
480-143191-7	SW-3	Total/NA	Water	350.1	
MB 480-439301/3	Method Blank	Total/NA	Water	350.1	
LCS 480-439301/4	Lab Control Sample	Total/NA	Water	350.1	

Analysis Batch: 439569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-2	MW-5S	Total/NA	Water	SM 4500 Cl- E	
480-143191-3	MW-7S	Total/NA	Water	SM 4500 Cl- E	
480-143191-4	MW-1SR	Total/NA	Water	SM 4500 Cl- E	
480-143191-5	SW-1	Total/NA	Water	SM 4500 Cl- E	
480-143191-6	SW-2	Total/NA	Water	SM 4500 Cl- E	
480-143191-7	SW-3	Total/NA	Water	SM 4500 Cl- E	
MB 480-439569/51	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-439569/74	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 480-439569/52	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-439569/75	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
480-143191-2 MS	MW-5S	Total/NA	Water	SM 4500 Cl- E	
480-143191-2 MSD	MW-5S	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 439710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-143191-2	MW-5S	Total/NA	Water	SM 2340C	
480-143191-3	MW-7S	Total/NA	Water	SM 2340C	
480-143191-4	MW-1SR	Total/NA	Water	SM 2340C	
480-143191-5	SW-1	Total/NA	Water	SM 2340C	
480-143191-6	SW-2	Total/NA	Water	SM 2340C	
480-143191-7	SW-3	Total/NA	Water	SM 2340C	
MB 480-439710/27	Method Blank	Total/NA	Water	SM 2340C	
LCS 480-439710/28	Lab Control Sample	Total/NA	Water	SM 2340C	
480-143191-5 DU	SW-1	Total/NA	Water	SM 2340C	

Client Sample ID: Blind Duplicate

Lab Sample ID: 480-143191-1
Matrix: Water
Date Collected: 10/10/18 12:00
Date Received: 10/10/18 17:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 11:39	NMC	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 13:47	EMB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF

Client Sample ID: MW-5S

Lab Sample ID: 480-143191-2
Matrix: Water
Date Collected: 10/10/18 11:14
Date Received: 10/10/18 17:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	439589	10/16/18 12:06	NMC	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 13:51	EMB	TAL BUF
Total/NA	Analysis	350.1		10	439301	10/13/18 12:48	DCB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF
Total/NA	Analysis	SM 2340C		1	439710	10/16/18 09:00	AJS	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		1	439569	10/15/18 17:48	SAH	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	439148	10/12/18 09:32	MJB	TAL BUF

Client Sample ID: MW-7S

Lab Sample ID: 480-143191-3
Matrix: Water
Date Collected: 10/10/18 09:16
Date Received: 10/10/18 17:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 12:33	NMC	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 13:55	EMB	TAL BUF
Total/NA	Analysis	350.1		10	439301	10/13/18 12:48	DCB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF
Total/NA	Analysis	SM 2340C		1	439710	10/16/18 09:00	AJS	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		1	439569	10/15/18 18:04	SAH	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	439148	10/12/18 09:32	MJB	TAL BUF

Client Sample ID: MW-1SR

Lab Sample ID: 480-143191-4
Matrix: Water
Date Collected: 10/10/18 08:42
Date Received: 10/10/18 17:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 13:00	NMC	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 13:59	EMB	TAL BUF

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: MW-1SR

Date Collected: 10/10/18 08:42
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.1		1	439301	10/13/18 12:49	DCB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF
Total/NA	Analysis	SM 2340C		1	439710	10/16/18 09:00	AJS	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		1	439569	10/15/18 18:04	SAH	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	439148	10/12/18 09:32	MJB	TAL BUF

Client Sample ID: SW-1

Date Collected: 10/10/18 11:45
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 13:28	NMC	TAL BUF
Dissolved	Filtration	FILTRATION			439299	10/13/18 13:22	KMP	TAL BUF
Dissolved	Prep	3005A			439436	10/15/18 12:08	KMP	TAL BUF
Dissolved	Analysis	6010C		1	439678	10/16/18 09:33	EMB	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 14:02	EMB	TAL BUF
Total/NA	Analysis	350.1		1	439301	10/13/18 12:50	DCB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF
Total/NA	Analysis	SM 2340C		1	439710	10/16/18 09:00	AJS	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		1	439569	10/15/18 18:04	SAH	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	439148	10/12/18 09:32	MJB	TAL BUF

Client Sample ID: SW-2

Date Collected: 10/10/18 12:02
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 13:55	NMC	TAL BUF
Dissolved	Filtration	FILTRATION			439299	10/13/18 13:22	KMP	TAL BUF
Dissolved	Prep	3005A			439436	10/15/18 12:08	KMP	TAL BUF
Dissolved	Analysis	6010C		1	439678	10/16/18 09:52	EMB	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 14:32	EMB	TAL BUF
Total/NA	Analysis	350.1		1	439301	10/13/18 12:51	DCB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF
Total/NA	Analysis	SM 2340C		1	439710	10/16/18 09:00	AJS	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		1	439569	10/15/18 18:04	SAH	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	439148	10/12/18 09:32	MJB	TAL BUF

Lab Chronicle

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Client Sample ID: SW-3

Date Collected: 10/10/18 12:25
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 14:22	NMC	TAL BUF
Dissolved	Filtration	FILTRATION			439299	10/13/18 13:22	KMP	TAL BUF
Dissolved	Prep	3005A			439436	10/15/18 12:08	KMP	TAL BUF
Dissolved	Analysis	6010C		1	439678	10/16/18 09:56	EMB	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 14:36	EMB	TAL BUF
Total/NA	Analysis	350.1		1	439301	10/13/18 12:52	DCB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF
Total/NA	Analysis	SM 2340C		1	439710	10/16/18 09:00	AJS	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		1	439569	10/15/18 18:04	SAH	TAL BUF
Total/NA	Analysis	SM 4500 S2 F		1	439148	10/12/18 09:32	MJB	TAL BUF

Client Sample ID: MWFP-2S

Date Collected: 10/10/18 10:11
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	439589	10/16/18 14:49	NMC	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 14:39	EMB	TAL BUF
Total/NA	Analysis	7196A		1	438938	10/11/18 08:10	A1A	TAL BUF

Client Sample ID: MWFP-3S

Date Collected: 10/10/18 10:44
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	439589	10/16/18 15:16	NMC	TAL BUF
Total/NA	Prep	3005A			438980	10/12/18 08:33	KMP	TAL BUF
Total/NA	Analysis	6010C		1	439203	10/12/18 14:43	EMB	TAL BUF
Total/NA	Analysis	7196A		1	439145	10/12/18 09:49	KEB	TAL BUF

Client Sample ID: Trip Blank

Date Collected: 10/10/18 00:00
Date Received: 10/10/18 17:26

Lab Sample ID: 480-143191-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	439589	10/16/18 15:43	NMC	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: Benchmark Env. Eng. & Science, PLLC
TestAmerica Job ID: 480-143191-1
Project/Site: Benchmark-Peter Cooper sites

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Method Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
6010C	Metals (ICP)	SW846	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
7196A	Chromium, Hexavalent	SW846	TAL BUF
SM 2340C	Hardness, Total (mg/l as CaC03)	SM	TAL BUF
SM 4500 Cl- E	Chloride, Total	SM	TAL BUF
SM 4500 S2 F	Sulfide, Total	SM	TAL BUF
3005A	Preparation, Total Metals	SW846	TAL BUF
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF
FILTRATION	Sample Filtration	None	TAL BUF

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: Benchmark Env. Eng. & Science, PLLC
Project/Site: Benchmark-Peter Cooper sites

TestAmerica Job ID: 480-143191-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-143191-1	Blind Duplicate	Water	10/10/18 12:00	10/10/18 17:26
480-143191-2	MW-5S	Water	10/10/18 11:14	10/10/18 17:26
480-143191-3	MW-7S	Water	10/10/18 09:16	10/10/18 17:26
480-143191-4	MW-1SR	Water	10/10/18 08:42	10/10/18 17:26
480-143191-5	SW-1	Water	10/10/18 11:45	10/10/18 17:26
480-143191-6	SW-2	Water	10/10/18 12:02	10/10/18 17:26
480-143191-7	SW-3	Water	10/10/18 12:25	10/10/18 17:26
480-143191-8	MWFP-2S	Water	10/10/18 10:11	10/10/18 17:26
480-143191-9	MWFP-3S	Water	10/10/18 10:44	10/10/18 17:26
480-143191-10	Trip Blank	Water	10/10/18 00:00	10/10/18 17:26

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: RLD	Lab PM: Fischer, Brian J	Carrier Tracking No(s):	COC No: 480-119954-5100.1
Client Contact: ~~Heidi Higgins~~ Rick DeDio	Phone:	E-Mail: brian.fischer@testamericainc.com		Page: Page 1 of 1
Company: Benchmark Env. Eng. & Science, PLLC				Job #:

Address: 2558 Hamburg Turnpike Suite 300	Due Date Requested:
City: Lackawanna	TAT Requested (days):
State, Zip: NY, 14218	
Phone:	PO #: Purchase Order Requested
Email: ~~hhiggins@benchmarkturnkey.com~~	WO #:
Project Name: Benchmark-Peter Cooper sites	Project #: 48004066
Site: New York	SSOW#:

Analysis Requested

Preservation Codes: 480-143191 COC

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	350.1 - Ammonia (as N) S	2340C - Hardness as calcium carbonate D	SM4500_S2_D - Sulfide CB	SM4500_Cl_E - Chloride N	7196A - Chromium (hexavalent) N	8260C - TCL list OLM04.2 A	6010C - (MOD)As/Cr/Mn only D	6010C - (MOD) D. As/Cr/Mn only D	8260C - (MOD) chlorinated only A	Total Number of containers	Special Instructions/Note:
			Preservation Code:														
MW-7S	10/10/18	0916	G	Water			X	X	X	X	X	X	X				
MW-1SR		0842		Water			X	X	X	X	X	X	X				
MW-5S		1114		Water			X	X	X	X	X	X	X				
SW-1		1145		Water			X	X	X	X	X	X	X	X			* Dissolved metals
SW-2		1202		Water			X	X	X	X	X	X	X	X			* Bottles needs to
SW-3		1225		Water			X	X	X	X	X	X	X	X			* be filtered by
MWFP-2S		1011		Water							X		X		X		LAB for SW-1, SW-2
MWFP-3S		1014		Water							X		X		X		and SW-3.
Blind duplicate		1200		Water							X	X	X				
Matrix Spike SW-1		1145		Water							X	X	X				
Matrix Spike Duplicate SW-1		1145		Water							X	X	X				

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 10/10/18 - 1430	Company: BM/TK	Received by: Rebecca Terry	Date/Time: 10/10/18 1558	Company: TAI
Relinquished by: Rebecca Terry	Date/Time: 10/10/18 1726	Company: TAI	Received by:	Date/Time: 10/10/18 1726	Company: TAB
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 4.4°C #3

Ver: 08/04/2016

Login Sample Receipt Checklist

Client: Benchmark Env. Eng. & Science, PLLC

Job Number: 480-143191-1

Login Number: 143191

List Source: TestAmerica Buffalo

List Number: 1

Creator: Kinecki, Kenneth P

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	Benchmark/Turnkey
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	False	
Chlorine Residual checked.	N/A	

ATTACHMENT 3

FIELD INSPECTION REPORT

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

Field Inspection Report
Post-Remedial Operation & Maintenance Plan

Property Name: Peter Cooper Gowanda Site		Project No.: 0021-010-100	
Client:			
Property Address: Palmer Street		Gowanda, NY	
Property ID: (Tax Assessment Map)	Section:	Block:	Lot(s):
Preparer's RLD		Date/Time: 10/10/18	

CERTIFICATION

The results of this inspection were discussed with the Site Manager. Any corrective actions required have been identified and noted in this report, and a supplemental Corrective Action Form has been completed. Proper implementation of these corrective actions have been discussed with the Site Manager, agreed upon, and scheduled.

Preparer / Inspector: R. Dubisz **Date:** 10/10/18

Signature:

Next Scheduled Inspection Date: 2019

Property Access

1. Is the access road in need of repair?	☐ yes	☒ no	☐ N/A
2. Sufficient signage posted (No Trespassing)?	☒ yes	☐ no	☐ N/A
3. Has there been any noted or reported trespassing?	☐ yes	☒ no	☐ N/A

Please note any irregularities/ changes in site access and security:

Final Surface Cover / Vegetation

The integrity of the vegetative soil cover or other surface coverage (e.g., asphalt, concrete) over the entire Site must be maintained. The following documents the condition of the above.

1. Final Cover is in Place and in good condition?	☒ yes	☐ no	☐ N/A
Cover consists of (mainly): **Wild Vegatative Grass Cover**			
2. Evidence of erosion?	☐ yes	☒ no	☐ N/A
3. Cracks visible in pavement?	☐ yes	☐ no	☑ N/A
4. Evidence of distressed vegetation/turf?	☐ yes	☒ no	☐ N/A
5. Evidence of unintended traffic and/or rutting?	☐ yes	☒ no	☐ N/A
6. Evidence of uneven settlement and/or ponding?	☐ yes	☒ no	☐ N/A

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Final Surface Cover / Vegetation

7. Damage to any surface coverage? ☐ yes ☑ no ☐ N/A

If yes to any question above, please provide more information below.

Gas Vent System Monitoring and Maintenance

Are there signs of stressed vegetation around gas vents? ☐ yes ☑ no ☐ N/A

Are the gas vents currently intact and operational? ☑ yes ☐ no ☐ N/A

Has regular maintenance and monitoring been documented and enclosed or referenced?
☑ yes ☐ no ☐ N/A

Groundwater Monitoring

Is there a plan in place and currently being followed? ☑ yes ☐ no ☐ N/A

Are the wells currently intact and operational? ☑ yes ☐ no ☐ N/A

When was the most recent sampling event report and submittal? Date: Oct 2017

When is the next projected sampling event? Date: _____

Property Use Changes / Site Development

Has the property usage changed, or site been redeveloped since the last inspection?
☐ yes ☑ no ☐ N/A

If yes, please list with date: _____

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New Information

Has any new information been brought to the owner/engineer's attention regarding any and/or all engineering and institutional controls and their operation and effectiveness?

☐ yes ☑ no ☐ N/A

Comments:

This space for Notes and Comments

Please include the following Attachments:

1. Site Sketch
2. Photographs

APPENDIX B

Site Inspection Report and Corrective Actions Taken

GREAT LAKES ENVIRONMENTAL & SAFETY CONSULTANTS, INC.

Field Inspection Report
Peter Cooper Gowanda Landfill Site

Date of Inspection: Mon Apr 29, 2019
On-Site Inspector: Mark Mol
P.E.: Ken Kloeber, PE

Property Access	Photo ID
Paved areas, parking lot and walking path, were not in need of repair.	N/A
A small informational sign for the park users was observed between the park area and the capped landfill	1, 2
No reports of trespassing were communicated to the inspector during the inspection. However, the capped area is not fenced off and access from all sides is unimpeded. The inspector observed ATV tracks on the cap.	3

Final Surface Cover/Vegetation	Photo ID
Cover is in place, but damaged in a few locations. The cover is not a wild vegetative cover, but an agricultural hay blend. Mike Hutchinson said that a farmer hays the field once a year.	N/A
No evidence of erosion or distressed vegetation was observed.	N/A
Evidence of traffic and rutting was observed in multiple locations. Damage appeared to be attributed to truck and ATV traffic on the capped area.	3, 4, 5, 6, 7
Water ponding on the cap was observed in two locations.	8,9

Gas Vent System	Photo ID
No signs of stressed vegetation around gas vents, no damage to vents, and Mike Hutchinson said that regular maintenance tasks involving these vents were being completed.	N/A

Groundwater Monitoring	Photo ID
MW-2S(R) was observed to not be capped or locked. Mike Hutchinson gave the inspector a lock and plug to place on this well. The plug was the wrong size and did not fit, but the inspector did close and lock the well.	10, 11

Notes	Photo ID
Sulfurous odors were observed when standing next to the middle gas vent and at the northwest corner of the property.	N/A
Mike Hutchinson detailed that Pump #1 was replaced April 25-26, 2019. An issue with the floats and pump controller was the cause. The pump was replaced by RP Mechanical. The electrical work was completed by electrician Roger Burzak.	N/A
Large trees and shrubs were observed to be growing out of the rip rap area along the creek.	12, 13
Leachate treatment building - cell antenna for pump alarm system is exposed and located in an area susceptible to vandalism.	14

Photo 1 – Small posting next to asphalt walking path.

Photo 2 – Clearer view of posting.

Photo 3 – ATV tracks on cap.

Photo 4 – Truck ruts on cap.

Provided By: Great Lakes Environmental & Safety Consultants, Inc.

Photo 5 – Truck ruts on cap.

Photo 6 – Fresh tire tracks on cap.

Photo 7 – Tire tracks on cap.

Photo 8 – Ponding water on cap.

Provided By: Great Lakes Environmental & Safety Consultants, Inc.

Photo 9 – Ponding water on cap.

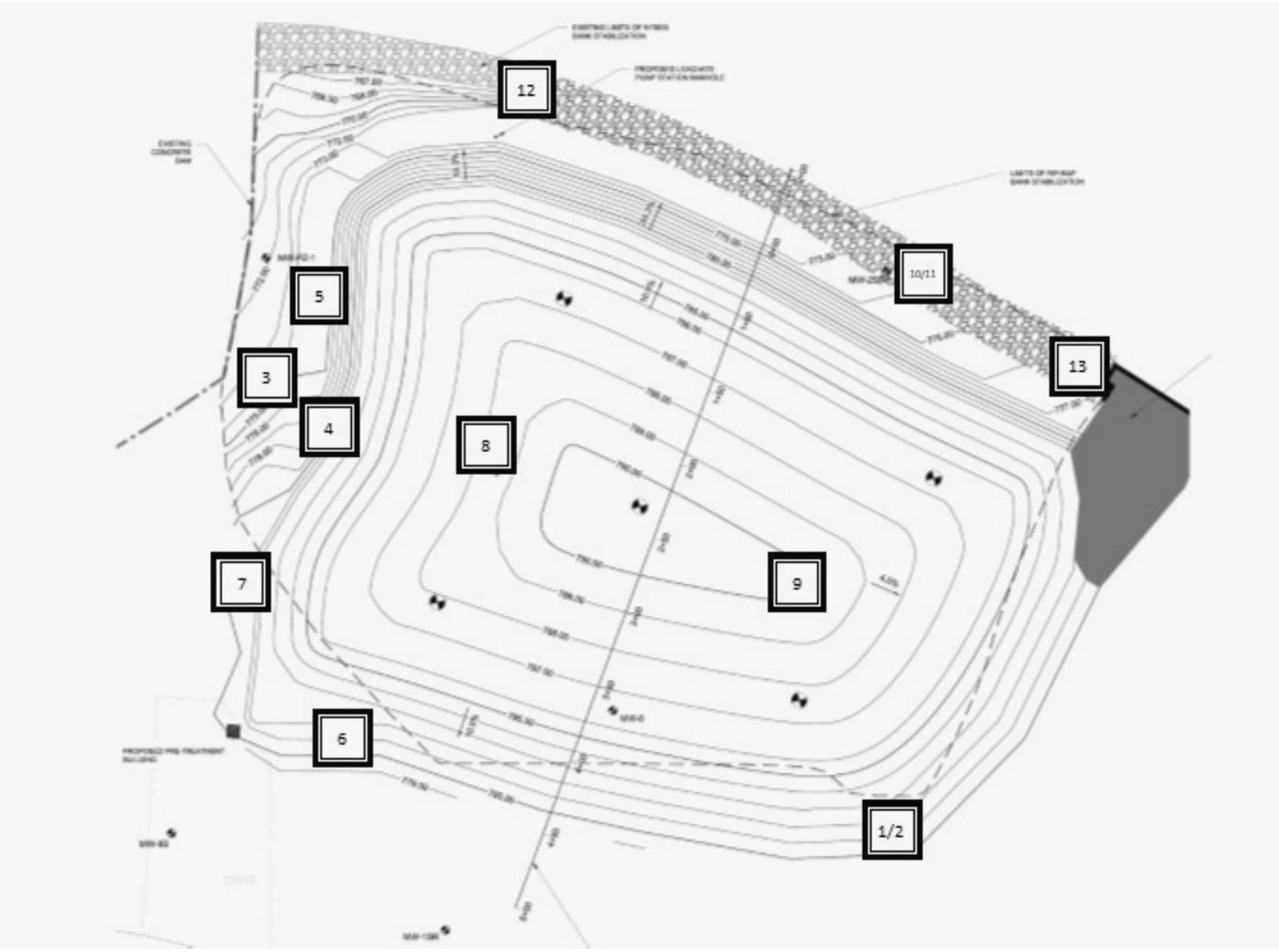
Photo 10 – MW-2S(R) found uncapped and unlocked.

Photo 13 – View upstream from rip rap at concrete wall beginning showing trees and shrub growth.

Photo 14 – Treatment Building – Alarm cell antenna location and mount susceptible to vandalism.

Photo 11 – MW-2S(R) with wrong size cap, MW-5S lid was locked by Great Lakes.

Photo 12 – View upstream from lift station manhole with visible trees and shrubs growing in rip rap.


12
10/11
13
5
3
4
8
7
9
6
1/2

Peter Cooper Superfund Site
Palmer Street - Gowanda NY

Corrective Actions
(Site SMP / Site S/FMP / Site OM&MP / Site Agreement)

Property: ☐ GARC ☐ NYSEG

Date prepared: 8/26/2019

Preparer's Name: Ken Kloeber PE

Describe issue(s) to be addressed [*include sketches, photos, location information as appropriate*]:

Mature woody vegetation well-rooted in rip-rap along the creek (new rip-rap section.)

During inspection various truck, ATV ruts observed on landfill cap.

MW plug needs replacing with proper size (MW-2R at creek bank.)

See 4/29/2019 site inspection report and photo log for locations.

The Environmental Inspection of the noted property determined the need for corrective action. This form documents that the required corrective action(s) were completed.

Corrective Action(s) taken; include Dates (addressed) / By (staff or contractor name):

CERTIFICATION [*include photos, sketches, locations as appropriate to show action(s) taken*]

I hereby certify that the corrective action(s) described were completed according to all relevant requirements of the *Site Management Plan* and *Soil/Fill Management Plan, Site OM&M Plan, Site Agreement* and all other applicable documents.

By: David L. Smith Signature

Position or Title Mayor Date 9/13/19

APPENDIX C

2018 Leachate Flow Monitoring and WWTP Sampling Records

Peter Cooper
Leachate Billing

January 1, 2018-December 31, 2018

Treatment and Disposal:

Month	Flow (in thousands/month)	Amount, Dollars
January	349.435	$174.72
February	350.665	$175.33
March	265.873	$132.94
April	436.236	$218.12
May	261.065	$130.53
June	138.736	$69.37
July	109.406	$54.70
August	104.324	$52.16
September	104.104	$52.05
October	301.822	$150.91
November	386.179	$193.09
December	427.24	$213.62
Total:	3235.085	$1,617.54

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2018 LEACHATE FLOW and SAMPLING RESULTS

	64			61	62	63	66	67	68	69	70	71	72
	Flow Meter Totalizer	Total Flow for Period	Avg Daily Flow for Period	pH Min. 5.0 Max. 10.5	Temp.	D.O. Min. 2.0 Daily	BOD	TSS	Phenols	TKN	Sulfates	Sulfides	NH3
Date	Gallons	Gals	Gals	SU	°C	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Jan 1	3,960,250			7.14	50.20	4.40							
Jan 15	4,092,665	132,415	9,458	7.15	44.60	5.30							
Jan 22	4,175,051	82,386	11,769	7.52	48.70	5.30							
Jan 29	4,295,056	120,005	17,144	7.19	47.80	3.50							
Jan 31	4,320,510	25,454	12,727										
Feb 1	4,328,826	8,316	8,316										
Feb 5	4,360,821	31,995	7,999	7.10	47.60	5.30							
Feb 12	4,407,460	46,639	6,663	7.20	46.70	5.40							
Feb 19	4,503,265	95,805	13,686	7.21	48.40	5.20							
Feb 26	4,633,006	129,741	18,534	7.29	49.60	4.80							
Feb 28	4,671,175	38,169	19,085										
Mar 1	4,683,038	11,863	11,863										
Mar 5	4,741,412	58,374	14,594	7.37	46.70	5.60							
Mar 12	4,809,935	68,523	9,789	7.34	48.80	6.40							
Mar 19	4,866,747	56,812	8,116	7.46	54.20	5.80							
Mar 26	4,918,374	51,627	7,375	7.40	47.40	6.30							
Mar 31	4,995,522	77,148	15,430										
Apr 1	5,014,196	18,674	18,674										
Apr 2	5,032,744	18,548	18,548	7.31	47.30	5.90							
Apr 9	5,158,413	125,669	17,953	7.10	49.30	6.40							
Apr 16	5,236,432	78,019	11,146	6.96	50.70	5.50							
Apr 23	5,361,821	125,389	17,913	7.09	50.80	3.70							
Apr 30	5,440,736	78,915	11,274	7.17	53.40	4.70							
May 1	5,450,432	9,696	9,696										
May 7	5,504,557	54,125	9,021	7.24	57.30	4.80							
May 9							13.4	12.0	0.017	218	225	<1	181
May 14	5,559,236	54,679	10,936	7.21	56.50	3.90							
May 21	5,633,955	74,719	10,674	7.10	59.50	4.10							
May 28	5,686,583	52,628	7,518	7.16	61.40	2.80							
May 31	5,701,801	15,218	5,073										
Jun 1	5,706,853	5,052	5,052										
Jun 4	5,723,825	16,972	5,657	7.27	63.60	5.20							
Jun 11	5,752,560	28,735	4,105	7.27	63.40	3.80							
Jun 18	5,782,461	29,901	4,272	7.27	64.20	2.90							
Jun 25	5,809,638	27,177	3,882	7.17	64.10	3.00							
Jun 30	5,840,537	30,899	6,180										

Date	Flow Meter Totalizer Gallons	Total Flow for Period Gals	Avg Daily Flow for Period Gals	pH Min. 5.0 Max. 10.5 SU	Temp. °C	D.O. Min. 2.0 Daily mg/l	BOD mg/l	TSS mg/l	Phenols mg/l	TKN mg/l	Sulfates mg/l	Sulfides mg/l	NH3 mg/l
Jul 1	5,844,191	3,654	3,654										
Jul 2	5,847,754	3,563	3,563	7.23	65.50	3.50							
Jul 9	5,873,510	25,756	3,679	7.20	67.60	3.90							
Jul 16	5,892,937	19,427	2,775	7.26	68.10	5.60							
Jul 23	5,917,102	24,165	3,452	7.13	67.90	3.30							
Jul 30	5,947,802	30,700	4,386	7.35	67.70	5.60							
Jul 31	5,949,943	2,141	2,141										
Aug 1	5,952,647	2,704	2,704										
Aug 6	5,964,630	11,983	2,397	7.23	70.50	4.70							
Aug 13	5,986,343	21,713	3,102	7.19	71.70	2.90							
Aug 20	6,017,286	30,943	4,420	7.24	68.80	4.50							
Aug 27	6,044,236	26,950	3,850	7.20	67.70	5.30							
Aug 31	6,054,267	10,031	2,508										
Sep 1	6,056,790	2,523	2,523										
Sep 3	6,061,552	4,762	2,381	7.28	67.40	3.10							
Sep 10	6,077,470	15,918	2,274	7.11	68.80	3.40							
Sep 17	6,121,464	43,994	6,285	7.22	68.90	3.10							
Sep 24	6,138,075	16,611	2,373	7.28	67.80	2.60							
Sep 27							17.0	5.5	<0.0056	94	1	<1	126
Sep 30	6,158,371	20,296	6,765										
Oct 1	6,160,950	2,579	2,579	7.42	65.90	4.30							
Oct 8	6,253,975	93,025	13,289	7.10	65.90	3.30							
Oct 15	6,313,885	59,910	8,559	7.19	64.90	4.00							
Oct 19													
Oct 22	6,365,090	51,205	17,068	7.15	59.60	2.90							
Oct 29	6,430,181	65,091	9,299	7.20	59.40	4.30							
Oct 31	6,460,193	30,012	15,006										
Nov 1	6,475,243	15,050	15,050										
Nov 5	6,537,071	61,828	15,457	7.24	60.30	2.80							
Nov 12	6,631,040	93,969	13,424	7.23	55.70	3.10							
Nov 19	6,710,667	79,627	11,375	7.28	54.30	4.20							
Nov 26	6,785,280	74,613	10,659	7.16	53.80	3.50							
Nov 30	6,846,372	61,092	15,273										
Dec 1	6,861,632	15,260	15,260										
Dec 3	6,892,466	30,834	15,417	7.18	52.60	2.30							
Dec 10	6,997,357	104,891	14,984	7.34	51.10	4.40							
Dec 17	7,077,088	79,731	11,390	7.42	50.80	3.90							
Dec 24	7,172,980	95,892	13,699	7.16	49.90	2.70							
Dec 31	7,273,606	100,626	14,375	7.38	53.60	4.60							

2018 LANDFILL AREA MONITORING																				
	81	82	83	84	85	86	87	88	89	90	91	92	93.0	94	95	96	97	98	99	100
	Vent #1 O2	**Vent # 1 CO**	**Vent # 1 H2S**	**Vent # 1 LEL**	**Vent # 2 O2**	**Vent # 2 CO**	**Vent # 2 H2S**	**Vent # 2 LEL**	**Vent # 3 O2**	**Vent # 3 CO**	**Vent # 3 H2S**	**Vent # 3 LEL**	**Vent # 4 O2**	**Vent # 4 CO**	**Vent # 4 H2S**	**Vent # 4 LEL**	**Vent # 5 O2**	**Vent # 5 CO**	**Vent # 5 H2S**	**Vent # 5 LEL**
Date																				
Oct 19	**20.4**	**0**	**0.0**	**15.0**	**13.0**	**67.0**	**28.4**	**63.0**	**20.9**	**0.0**	**0.0**	**0.0**	**20.9**	**0.0**	**0.0**	**9.0**	**20.9**	**0.0**	**0.0**	**0.0**

APPENDIX D

2018 Leachate Water Quality Sampling Analytical Results

MICROBAC®

Microbac Laboratories, Inc. - Erie

CERTIFICATE OF ANALYSIS

18E1320

Gowanda, Village of

Andrew Carriero
27 East Main Street
Gowanda, NY 14070

Project Name: Peter Cooper for Priority Pollutant

Project / PO Number: N/A
Received: 05/10/2018
Reported: 05/22/2018

Analytical Testing Parameters

Client Sample ID: Peter Cooper Comp.
Sample Matrix: Aqueous
Lab Sample ID: 18E1320-01
Collected By: A. Carriero
Collection Date: 05/09/2018 13:30

Inorganics	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 300.0, Rv. 2.1							
Sulfate	**225**	5.00	mg/L		05/15/18 2013	05/15/18 2013	DJS
Method: EPA 420.1 (1978)							
Phenols - 4AAP	**0.017**	0.005	mg/L		05/11/18 0930	05/11/18 1245	LAN
Method: HACH 8000							
Chemical Oxygen Demand (COD)	**31.7**	5.00	mg/L		05/16/18 1020	05/17/18 0942	CMF
Method: SM 2540 D-97,-11							
Total Suspended Solids - TSS	**12.0**	5.0	mg/L		05/14/18 1015	05/15/18 0915	KJC
Method: SM 4500 CN C/E-99,-11							
Cyanide	**0.006**	0.006	mg/L		05/14/18 0845	05/14/18 1732	BJJ
Method: SM 4500 NH3 B/F-97,-11							
Ammonia as N	**181**	6.00	mg/L		05/11/18 1445	05/14/18 1252	DJS
Method: SM 4500 NH3 C/F-97,-11							
Total Kjeldahl Nitrogen - TKN	**218**	20.0	mg/L		05/14/18 0921	05/14/18 1731	DJS
Method: SM 4500 P B,E-99,-11							
Phosphorus, Total as P	**0.591**	0.100	mg/L		05/10/18 1500	05/14/18 1432	DJS
Method: SM 5210 B-01,-11							
Biochemical Oxygen Demand (BOD5)	**13.4**	4.0	mg/L		05/11/18 1058	05/16/18 0926	LAN

Metals, Total	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.7, Rv. 4.4							
Antimony	<0.050	0.050	mg/L		05/11/18 0922	05/14/18 2127	MWR
Beryllium	<0.0010	0.0010	mg/L		05/11/18 0922	05/14/18 2125	MWR
Chromium	**0.037**	0.010	mg/L		05/11/18 0922	05/14/18 2125	MWR
Copper	**0.058**	0.010	mg/L		05/11/18 0922	05/14/18 2125	MWR
Lead	<0.010	0.010	mg/L		05/11/18 0922	05/14/18 2127	MWR
Nickel	<0.010	0.010	mg/L		05/11/18 0922	05/14/18 2125	MWR
Silver	<0.010	0.010	mg/L		05/11/18 0922	05/14/18 2125	MWR

CERTIFICATE OF ANALYSIS

18E1320

Client Sample ID:	Peter Cooper Comp.		
Sample Matrix:	Aqueous	**Collected By:**	A. Carriero
Lab Sample ID:	18E1320-01	**Collection Date:**	05/09/2018 13:30

Metals, Total	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Zinc	<0.010	0.010	mg/L		05/11/18 0922	05/16/18 1247	MWR
Cadmium	<0.003	0.003	mg/L		05/11/18 0922	05/16/18 1247	MWR
Method: SM 3112 B-09,-11							
Mercury	<0.0002	0.0002	mg/L		05/16/18 1100	05/17/18 1215	BJJ
Method: SM 3113 B-04							
Arsenic	**0.005**	0.002	mg/L		05/14/18 1000	05/14/18 1753	BJJ
Selenium	<0.0020	0.0020	mg/L		05/14/18 1000	05/18/18 1500	BJJ

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 200.8							
Thallium, Total	<0.000200	0.000200	mg/L		05/14/18 0750	05/14/18 1340	JYH

608	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 608.3							
4,4'-DDD	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
4,4'-DDE	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
4,4'-DDT	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aldrin	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
alpha-BHC	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
beta-BHC	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Chlordane	<1.06	1.06	ug/L		05/14/18 1040	05/17/18 0731	ECL
delta-BHC	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Dieldrin	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Endosulfan I	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Endosulfan II	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Endosulfan sulfate	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Endrin	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Endrin aldehyde	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
gamma-BHC (Lindane)	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Heptachlor	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Heptachlor epoxide	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Methoxychlor	<0.0532	0.0532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Toxaphene	<1.06	1.06	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aroclor-1016	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aroclor-1221	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aroclor-1232	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aroclor-1242	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aroclor-1248	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL

CERTIFICATE OF ANALYSIS

18E1320

Client Sample ID:	Peter Cooper Comp.		
Sample Matrix:	Aqueous	**Collected By:**	A. Carriero
Lab Sample ID:	18E1320-01	**Collection Date:**	05/09/2018 13:30

608	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Aroclor-1254	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Aroclor-1260	<0.532	0.532	ug/L		05/14/18 1040	05/17/18 0731	ECL
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	41.0	Limit: 20-180	% Rec		05/14/18 1040	05/17/18 0731	ECL
Surrogate: Decachlorobiphenyl	24.7	Limit: 25-140	% Rec	*	05/14/18 1040	05/17/18 0731	ECL

625-Special	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1							
1,2,4-Trichlorobenzene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
1,2-Diphenylhydrazine (as Azobenzene)	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2,4,6-Trichlorophenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2,4-Dichlorophenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2,4-Dimethylphenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2,4-Dinitrophenol	<25.3	25.3	ug/L		05/15/18 1340	05/17/18 0426	SCB
2,4-Dinitrotoluene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2,6-Dinitrotoluene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2-Chloronaphthalene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2-Chlorophenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2-Methylphenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
2-Nitrophenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
3,3'-Dichlorobenzidine	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
3-,4-Methylphenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
4,6-Dinitro-2-methylphenol	<25.3	25.3	ug/L		05/15/18 1340	05/17/18 0426	SCB
4-Bromophenyl phenyl ether	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
4-Chloro-3-methylphenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
4-Chlorophenyl phenyl ether	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
4-Nitrophenol	<25.3	25.3	ug/L		05/15/18 1340	05/17/18 0426	SCB
Acenaphthene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Acenaphthylene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Anthracene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Benzidine	<25.3	25.3	ug/L		05/15/18 1340	05/17/18 0426	SCB
Benzo(a)anthracene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Benzo(a)pyrene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Benzo(b)fluoranthene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Benzo(g,h,i)Perylene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Benzo(k)fluoranthene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Bis(2-Chloroethoxy)Methane	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Bis(2-Chloroethyl)ether	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
bis(2-Chloroisopropyl)ether	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
bis(2-Ethylhexyl)phthalate	**7.41**	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Butyl benzyl phthalate	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Chrysene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Dibenz(a,h)anthracene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Diethyl phthalate	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB

Client Sample ID:	Peter Cooper Comp.		
Sample Matrix:	Aqueous	**Collected By:**	A. Carriero
Lab Sample ID:	18E1320-01	**Collection Date:**	05/09/2018 13:30

625-Special	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Dimethyl phthalate	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Di-N-Butylphthalate	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Di-n-octyl phthalate	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Fluoranthene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Fluorene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Hexachlorobenzene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Hexachlorobutadiene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Hexachlorocyclopentadiene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Hexachloroethane	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Indeno(1,2,3-cd)pyrene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Isophorone	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Naphthalene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Nitrobenzene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
N-Nitrosodimethylamine	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Diphenylamine/n-Nitrosodiphenylamine	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
N-Nitrosodipropylamine	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Pentachlorophenol	<25.3	25.3	ug/L		05/15/18 1340	05/17/18 0426	SCB
Phenanthrene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Phenol	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Pyrene	<5.05	5.05	ug/L		05/15/18 1340	05/17/18 0426	SCB
Surrogate: 2,4,6-Tribromophenol	93.3	Limit: 10-123	% Rec		05/15/18 1340	05/17/18 0426	SCB
Surrogate: 2-Fluorobiphenyl	82.3	Limit: 43-116	% Rec		05/15/18 1340	05/17/18 0426	SCB
Surrogate: 2-Fluorophenol	53.4	Limit: 21-100	% Rec		05/15/18 1340	05/17/18 0426	SCB
Surrogate: Nitrobenzene-d5	89.6	Limit: 35-114	% Rec		05/15/18 1340	05/17/18 0426	SCB
Surrogate: p-Terphenyl-d14	44.5	Limit: 33-141	% Rec		05/15/18 1340	05/17/18 0426	SCB
Surrogate: Phenol-d5	38.2	Limit: 10-94	% Rec		05/15/18 1340	05/17/18 0426	SCB

Sulfide	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: A4500F							
Sulfide	<1.00	1.00	mg/L		05/09/18 1330	05/14/18 1500	TB

Client Sample ID:	Peter Cooper Grab		
Sample Matrix:	Aqueous	**Collected By:**	A. Carriero
Lab Sample ID:	18E1320-02	**Collection Date:**	05/10/2018 7:30

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

Volatile Organics-Spec/MS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 624.1							
1,1,1,2-Tetrachloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,1,1-Trichloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,1,2,2-Tetrachloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,1,2-Trichloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,1-Dichloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,1-Dichloroethene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,1-Dichloropropene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2,3-Trichlorobenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2,3-Trichloropropane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2,4-Trichlorobenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2,4-Trimethylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2-Dibromo-3-chloropropane	<2.00	2.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2-Dibromoethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2-Dichlorobenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2-Dichloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,2-Dichloropropane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,3,5-Trimethylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,3-Dichlorobenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,3-Dichloropropane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,4-Dichlorobenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
1,4-Dioxane	<100	100	ug/L		05/09/18 0730	05/11/18 1611	HRF
2,2-Dichloropropane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
2-Butanone	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
2-Chloroethyl vinyl ether	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
2-Chlorotoluene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
2-Hexanone	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
3-Chloro-1-propene	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
4-Chlorotoluene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
4-Methyl-2-pentanone	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Acetone	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Acrolein	<100	100	ug/L		05/09/18 0730	05/11/18 1611	HRF
Acrylonitrile	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Benzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Bromobenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Bromochloromethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Bromodichloromethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Bromoform	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Bromomethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Carbon disulfide	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Carbon tetrachloride	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Chlorobenzene	<1.00	1.00	ug/L	J	05/09/18 0730	05/11/18 1611	HRF

CERTIFICATE OF ANALYSIS

18E1320

Client Sample ID:	Peter Cooper Grab		
Sample Matrix:	Aqueous	**Collected By:**	A. Carriero
Lab Sample ID:	18E1320-02	**Collection Date:**	05/10/2018 7:30

Volatile Organics-Spec/MS	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Chlorodibromomethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Chloroethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Chloroform	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Chloromethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
cis-1,2-Dichloroethene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
cis-1,3-Dichloropropene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Dibromomethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Dichlorodifluoromethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Ethylbenzene	<0.400	0.400	ug/L		05/09/18 0730	05/11/18 1611	HRF
Hexachlorobutadiene	<0.400	0.400	ug/L		05/09/18 0730	05/11/18 1611	HRF
Isopropylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
m-,p-Xylene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Methyl t-butyl ether (MTBE)	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Methylene chloride	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
n-Butylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
n-Propylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Naphthalene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
o-Xylene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
p-Isopropyltoluene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
sec-Butylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Styrene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
tert-Butylbenzene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Tetrachloroethene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Toluene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
trans-1,2-Dichloroethene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
trans-1,3-Dichloropropene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Trichloroethene	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Trichlorofluoromethane	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Vinyl acetate	<5.00	5.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Vinyl chloride	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Xylenes	<1.00	1.00	ug/L		05/09/18 0730	05/11/18 1611	HRF
Surrogate: 1,2-Dichloroethane-d4	105	Limit: 63-140	% Rec		05/09/18 0730	05/11/18 1611	HRF
Surrogate: 4-Bromofluorobenzene	107	Limit: 60-140	% Rec		05/09/18 0730	05/11/18 1611	HRF
Surrogate: Toluene-d8	102	Limit: 60-140	% Rec		05/09/18 0730	05/11/18 1611	HRF

Definitions

***:**	Surrogate or spike compound out of range
J:	The analyte was positively identified, but the quantitation was below the RL
MDL:	Minimum Detection Limit
RL:	Reporting Limit

Project Requested Certification(s)

Microbac Laboratories, Inc. - Erie	
NY DOH# 10121	New York State Department of Health
Microbac Laboratories, Inc. - Ohio Valley	
NY DOH# 10861	NY Department of Health
PA DEP# 68-01670	PA Department of Environmental Protection

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

Reviewed and Approved By:

Tina Sharer
Project Manager
Reported: 05/22/2018 09:41

MICROBAC

CHAIN OF CUSTODY

Put bar code here

18E1320 Gowanda, Village of WWTP

Microbac Erie Division
1962 Wager Road
Erie, PA 16509

814.825.8533
eriemm@microbac.com

Client /Company Name: Village of Gowanda Sewer Dept	Contact Name: Andrew Carriero
Address: 27 E. Main Street	Bill To/PO#:
City/State/Zip: Gowanda, NY 14070	
Phone: 716-532-5931 / Email/Fax: gowandawwtp@mail.com	Potential Hazards: Non-Hazard [X] Hazard [ ] Radioactive [ ]
Project Name/ID: **Priority Pollutant – Peter Cooper**	Disposal: Dispose of [X] Return [ ] Retain [ ]
Sampled By: A. CARRIERO / Due Date:	Compliance Sample: Yes [X] No [ ] / State: **NY**
Shipped By: Microbac Courier / Tracking #:	PWSID#: / Monitoring Period:
Type Code: G-Grab C-Composite / Comp. Start: 5-9-18/7:30A	Comp. Stop: 5-10-18/7:30A

Matrix Code: DW-Potable water WW-Nonpotable water SS-Soil/Sludge F-Food S-Swab O-Other

Analyses

Sample Identification	Date Taken	Time Taken	Type G	Type C	Matrix	Tot. # Cont.	None	HNO3	H2SO4	NaOH	HCl	Thio	Other	Total Phos :: COD :: Dist. NH3 :: TKN	Acid Extractables/Base Neutral Extractables by EPA 625 :: Pesticides/PCBs by EPA 608:: Five Peaks on BNA Scan	Ag, As, Be, Cd, Cr, Cu, Hg, Ni, Pb, Sb, Se, Tl, Zn	BOD :: SO4 :: TSS	Phenolics, Total by EPA 420.1	Sulfide by SM4500-S2 F	Cyanide, Total	Volatile Organics by EPA 624 :: Five Peaks on VOC Scan
Peter Cooper Composite	5-10-18	7:30A		X	WW	~~10~~ 11	4	1	~~3~~ 4	1			1	X	X	X	X	X	X	X	
Peter Cooper Grab	5-9-18	8:30A, 1:30P	X		WW	3						3									X

Client switched times as per time 5-10-18
MF 5-10-18

Instructions/Comments:

Samples, Containers & COC Verified as per Sample Receiving Checklist INITIALS: [signature] DATE: 5-11-18

Relinquished By:	Date/Time:	Received By:	Date/Time:
A. Carriero	5-10-18 / 0907	Steve Schl[signature]	5-10-18 0907
Steve Schl[signature]	5-10-18 1400	[signature]	5-10-18 1400

Temp 1.7 °C
Iced: (Y) N
Intact: (Y) N

QC270 V6

Microbac

Laboratory Report Number: L18050711

Carolyn Vollentine
Microbac Laboratories
1962 Wager Road
Erie, PA 16509

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
– Client Services Support
(740) 373-4071
sueellen.adams@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on May 18 2018

Leslie Bucina – Managing Director

State of Origin: PA
Accrediting Authority: Department of Environmental Protection ID:68-01670
QAPP: Microbac OVD

Microbac

Lab Report #: L18050711
Lab Project #: 2941.011
Project Name: Erie
Lab Contact:

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00114813	H	0.0		1001891781510004575000439982701446	X
00115912	H	0.0		1001891781510004575000439982701435	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	NA
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac

Lab Report #: L18050711
Lab Project #: 2941.011
Project Name: Erie
Lab Contact:

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18E1320-01	L18050711-01	05/09/2018 13:30	05/11/2018 10:30
18E1320-02	L18050711-02	05/09/2018 07:30	05/11/2018 10:30

Login Number: L18050711
Department: Semivolatiles
Analyst: Sarah Bogolin

METHOD

Preparation 3510C/1311

Analysis 40 CFR Part 136 625.1

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: The LCS/LCSD pair exceeded % RPD criteria for Benzidine, however the recoveries for both the LCS and LCSD are within specified limits.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG660075-03	Benzidine	2018-05-17 00:40:00	140		30	RPD

Matrix Spikes: There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed

MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

SAMPLES

Samples: All acceptance criteria were met.

Internal Standards: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

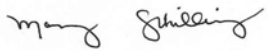
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 136692
Approved By: Mary Schilling



Login Number: L18050711
Department: General Chromatography
Analyst: Eric Lawson

METHOD

Analysis U.S. EPA 40 CFR Method 608.3

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 20%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac recommends site specific MS/MSD samples to avoid possible data qualification.

SAMPLES

Samples: All acceptance criteria were met.

Surrogates: Recovery out of range was observed for the following surrogate: Decachlorobiphenyl. Sample 01 was not re-extracted for low surrogate; the recovery was greater than 10%.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L18050711-01	Decachlorobiphenyl	2018-05-17 07:31:00	24.7	25	140	Recovery

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peakcompletely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low areacounts for the target compound.

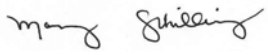
Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene andbenzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 136654
Approved By: Mary Schilling



Certificate of Analysis

Sample #:	L18050711-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS12
Client ID:	18E1320-01	**Prep Method:**	3510C	**Prep Date:**	05/15/2018 13:40
Matrix:	Water 2	**Analytical Method:**	625.1	**Cal Date:**	05/16/2018 20:53
Workgroup #:	WG660647	**Analyst:**	SCB	**Run Date:**	05/17/2018 04:26
Collect Date:	05/09/2018 13:30	**Dilution:**	1	**File ID:**	12M67249
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,2,4-Trichlorobenzene	120-82-1		U	5.05	2.53
1,2-Diphenylhydrazine (as Azobenzene)	122-66-7		U	5.05	2.53
2,4,6-Trichlorophenol	88-06-2		U	5.05	2.53
2,4-Dichlorophenol	120-83-2		U	5.05	2.53
2,4-Dimethylphenol	105-67-9		U	5.05	2.53
2,4-Dinitrophenol	51-28-5		U	25.3	12.6
2,4-Dinitrotoluene	121-14-2		U	5.05	2.53
2,6-Dinitrotoluene	606-20-2		U	5.05	2.53
2-Chloronaphthalene	91-58-7		U	5.05	2.53
2-Chlorophenol	95-57-8		U	5.05	2.53
2-Methylphenol	95-48-7		U	5.05	2.53
2-Nitrophenol	88-75-5		U	5.05	2.53
3,3'-Dichlorobenzidine	91-94-1		U	5.05	2.53
3-,4-Methylphenol	65794-96-9		U	5.05	2.53
4,6-Dinitro-2-methylphenol	534-52-1		U	25.3	12.6
4-Bromophenyl phenyl ether	101-55-3		U	5.05	2.53
4-Chloro-3-methylphenol	59-50-7		U	5.05	2.53
4-Chlorophenyl phenyl ether	7005-72-3		U	5.05	2.53
4-Nitrophenol	100-02-7		U	25.3	12.6
Acenaphthene	83-32-9		U	5.05	2.53
Acenaphthylene	208-96-8		U	5.05	2.53
Anthracene	120-12-7		U	5.05	2.53
Benzidine	92-87-5		U	25.3	12.6
Benzo(a)anthracene	56-55-3		U	5.05	2.53
Benzo(a)pyrene	50-32-8		U	5.05	2.53
Benzo(b)fluoranthene	205-99-2		U	5.05	2.53
Benzo(g,h,i)Perylene	191-24-2		U	5.05	2.53
Benzo(k)fluoranthene	207-08-9		U	5.05	2.53
Bis(2-Chloroethoxy)Methane	111-91-1		U	5.05	2.53
Bis(2-Chloroethyl)ether	111-44-4		U	5.05	2.53
bis(2-Chloroisopropyl)ether	108-60-1		U	5.05	2.53
bis(2-Ethylhexyl)phthalate	117-81-7	7.41		5.05	2.53
Butyl benzyl phthalate	85-68-7		U	5.05	2.53

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Chrysene	218-01-9		U	5.05	2.53
Dibenz(a,h)anthracene	53-70-3		U	5.05	2.53
Diethyl phthalate	84-66-2		U	5.05	2.53
Dimethyl phthalate	131-11-3		U	5.05	2.53
Di-N-Butylphthalate	84-74-2		U	5.05	2.53
Di-n-octyl phthalate	117-84-0		U	5.05	2.53
Fluoranthene	206-44-0		U	5.05	2.53
Fluorene	86-73-7		U	5.05	2.53
Hexachlorobenzene	118-74-1		U	5.05	2.53
Hexachlorobutadiene	87-68-3		U	5.05	2.53
Hexachlorocyclopentadiene	77-47-4		U	5.05	2.53
Hexachloroethane	67-72-1		U	5.05	2.53
Indeno(1,2,3-cd)pyrene	193-39-5		U	5.05	2.53
Isophorone	78-59-1		U	5.05	2.53
Naphthalene	91-20-3		U	5.05	2.53
Nitrobenzene	98-95-3		U	5.05	2.53
N-Nitrosodimethylamine	62-75-9		U	5.05	2.53
Diphenylamine/n-Nitrosodiphenylamine	86-30-6		U	5.05	2.53
N-Nitrosodipropylamine	621-64-7		U	5.05	2.53
Pentachlorophenol	87-86-5		U	25.3	12.6
Phenanthrene	85-01-8		U	5.05	2.53
Phenol	108-95-2		U	5.05	2.53
Pyrene	129-00-0		U	5.05	2.53

Surrogate	Recovery	Lower Limit	Upper Limit	Q
2,4,6-Tribromophenol	93.3	10	123	
2-Fluorobiphenyl	82.3	43	116	
2-Fluorophenol	53.4	21	100	
Nitrobenzene-d5	89.6	35	114	
p-Terphenyl-d14	44.5	33	141	
Phenol-d5	38.2	10	94	

U	Not detected at or above adjusted sample detection limit

Sample #: L18050711-01
Client ID: 18E1320-01
Matrix: Water 2
Workgroup #: WG660219
Collect Date: 05/09/2018 13:30
Sample Tag: 01

PrePrep Method: N/A
Prep Method: 3510C
Analytical Method: 608.3
Analyst: ECL
Dilution: 1
Units: ug/L

Instrument: HP15
Prep Date: 05/14/2018 10:40
Cal Date: 05/16/2018 22:14
Run Date: 05/17/2018 07:31
File ID: 15G67285.R

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
4,4'-DDD	72-54-8		U	0.0532	0.0106
4,4'-DDE	72-55-9		U	0.0532	0.0106
4,4'-DDT	50-29-3		U	0.0532	0.0106
Aldrin	309-00-2		U	0.0532	0.0106
alpha-BHC	319-84-6		U	0.0532	0.0106
beta-BHC	319-85-7		U	0.0532	0.0106
Chlordane	57-74-9		U	1.06	0.319
delta-BHC	319-86-8		U	0.0532	0.0106
Dieldrin	60-57-1		U	0.0532	0.0106
Endosulfan I	959-98-8		U	0.0532	0.0106
Endosulfan II	33213-65-9		U	0.0532	0.0106
Endosulfan sulfate	1031-07-8		U	0.0532	0.0106
Endrin	72-20-8		U	0.0532	0.0106
Endrin aldehyde	7421-93-4		U	0.0532	0.0106
gamma-BHC (Lindane)	58-89-9		U	0.0532	0.0106
Heptachlor	76-44-8		U	0.0532	0.0106
Heptachlor epoxide	1024-57-3		U	0.0532	0.0106
Methoxychlor	72-43-5		U	0.0532	0.0106
Toxaphene	8001-35-2		U	1.06	0.319
Aroclor-1016	12674-11-2		U	0.532	0.266
Aroclor-1221	11104-28-2		U	0.532	0.266
Aroclor-1232	11141-16-5		U	0.532	0.266
Aroclor-1242	53469-21-9		U	0.532	0.266
Aroclor-1248	12672-29-6		U	0.532	0.266
Aroclor-1254	11097-69-1		U	0.532	0.266
Aroclor-1260	11096-82-5		U	0.532	0.266

Surrogate	Recovery	Lower Limit	Upper Limit	Q
2,4,5,6-Tetrachloro-m-xylene	41.0	20	180	
Decachlorobiphenyl	24.7	25	140	*

*	Surrogate or spike compound out of range
U	Not detected at or above adjusted sample detection limit

Sample #: L18050711-01
Client ID: 18E1320-01
Matrix: Water 2
Workgroup #: WG660091
Collect Date: 05/09/2018 13:30
Sample Tag: 01

PrePrep Method: N/A
Prep Method: 200.8
Analytical Method: 200.8
Analyst: JYH
Dilution: 1
Units: mg/L

Instrument: ICP-MS2
Prep Date: 05/14/2018 07:50
Cal Date: 05/14/2018 10:20
Run Date: 05/14/2018 13:40
File ID: NI.051418.134013

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Thallium, Total	7440-28-0		U	0.000200	0.000100
U	Not detected at or above adjusted sample detection limit				

Sample #: L18050711-01 **PrePrep Method:** N/A **Instrument:** BURET
Client ID: 18E1320-01 **Prep Method:** SM4500-S-(-2)-F-2000 **Prep Date:** N/A
Matrix: Water 2 **Analytical Method:** SM4500-S-(-2)-F-2000 **Cal Date:**
Workgroup #: WG660118 **Analyst:** TB **Run Date:** 05/14/2018 15:00
Collect Date: 05/09/2018 13:30 **Dilution:** 1 **File ID:** ET.1805141500-17
Sample Tag: **Units:** mg/L

Analyte	CAS #	Result	Qual	RL	MDL
Sulfide	18496-25-8		U	1.00	0.500
U	Not detected at or above adjusted sample detection limit				

Sample #: L18050711-02 **PrePrep Method:** N/A **Instrument:** HPMS17
Client ID: 18E1320-02 **Prep Method:** 5030B/5030C/5035A **Prep Date:** N/A
Matrix: Water 2 **Analytical Method:** 624.1 **Cal Date:** 04/18/2018 17:58
Workgroup #: WG659905 **Analyst:** HRF **Run Date:** 05/11/2018 16:11
Collect Date: 05/09/2018 07:30 **Dilution:** 1 **File ID:** 17M0279596
Sample Tag: 01 **Units:** ug/L

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		U	1.00	0.250
1,1,1-Trichloroethane	71-55-6		U	1.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		U	1.00	0.200
1,1,2-Trichloroethane	79-00-5		U	1.00	0.250
1,1-Dichloroethane	75-34-3		U	1.00	0.125
1,1-Dichloroethene	75-35-4		U	1.00	0.500
1,1-Dichloropropene	563-58-6		U	1.00	0.250
1,2,3-Trichlorobenzene	87-61-6		U	1.00	0.150
1,2,3-Trichloropropane	96-18-4		U	1.00	0.500
1,2,4-Trichlorobenzene	120-82-1		U	1.00	0.200
1,2,4-Trimethylbenzene	95-63-6		U	1.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		U	2.00	1.00
1,2-Dibromoethane	106-93-4		U	1.00	0.250
1,2-Dichlorobenzene	95-50-1		U	1.00	0.125
1,2-Dichloroethane	107-06-2		U	1.00	0.250
1,2-Dichloropropane	78-87-5		U	1.00	0.200
1,3,5-Trimethylbenzene	108-67-8		U	1.00	0.250
1,3-Dichlorobenzene	541-73-1		U	1.00	0.250

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
1,3-Dichloropropane	142-28-9		U	1.00	0.200
1,4-Dichlorobenzene	106-46-7		U	1.00	0.125
1,4-Dioxane	123-91-1		U	100	50.0
2,2-Dichloropropane	594-20-7		U	1.00	0.250
2-Butanone	78-93-3		U	5.00	2.50
2-Chloroethyl vinyl ether	110-75-8		U	5.00	2.00
2-Chlorotoluene	95-49-8		U	1.00	0.125
2-Hexanone	591-78-6		U	5.00	2.50
3-Chloro-1-propene	107-05-1		U	5.00	2.50
4-Chlorotoluene	106-43-4		U	1.00	0.250
4-Methyl-2-pentanone	108-10-1		U	5.00	2.50
Acetone	67-64-1		U	5.00	2.50
Acrolein	107-02-8		U	100	20.0
Acrylonitrile	107-13-1		U	5.00	2.50
Benzene	71-43-2		U	1.00	0.125
Bromobenzene	108-86-1		U	1.00	0.125
Bromochloromethane	74-97-5		U	1.00	0.200
Bromodichloromethane	75-27-4		U	1.00	0.250
Bromoform	75-25-2		U	1.00	0.500
Bromomethane	74-83-9		U	1.00	0.500
Carbon disulfide	75-15-0		U	1.00	0.500
Carbon tetrachloride	56-23-5		U	1.00	0.250
Chlorobenzene	108-90-7	0.192	J	1.00	0.125
Chlorodibromomethane	124-48-1		U	1.00	0.250
Chloroethane	75-00-3		U	1.00	0.500
Chloroform	67-66-3		U	1.00	0.125
Chloromethane	74-87-3		U	1.00	0.500
cis-1,2-Dichloroethene	156-59-2		U	1.00	0.250
cis-1,3-Dichloropropene	10061-01-5		U	1.00	0.250
Dibromomethane	74-95-3		U	1.00	0.250
Dichlorodifluoromethane	75-71-8		U	1.00	0.250
Ethylbenzene	100-41-4		U	0.400	0.250
Hexachlorobutadiene	87-68-3		U	0.400	0.250
Isopropylbenzene	98-82-8		U	1.00	0.250
m-,p-Xylene	179601-23-1		U	1.00	0.500
Methyl t-butyl ether (MTBE)	1634-04-4		U	1.00	0.500
Methylene chloride	75-09-2		U	1.00	0.250
n-Butylbenzene	104-51-8		U	1.00	0.250
n-Propylbenzene	103-65-1		U	1.00	0.125

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Naphthalene	91-20-3		U	1.00	0.200
o-Xylene	95-47-6		U	1.00	0.250
p-Isopropyltoluene	99-87-6		U	1.00	0.250
sec-Butylbenzene	135-98-8		U	1.00	0.250
Styrene	100-42-5		U	1.00	0.125
tert-Butylbenzene	98-06-6		U	1.00	0.250
Tetrachloroethene	127-18-4		U	1.00	0.250
Toluene	108-88-3		U	1.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	1.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	1.00	0.500
Trichloroethene	79-01-6		U	1.00	0.250
Trichlorofluoromethane	75-69-4		U	1.00	0.250
Vinyl acetate	108-05-4		U	5.00	2.50
Vinyl chloride	75-01-4		U	1.00	0.250
Xylenes	1330-20-7		U	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	105	63	140	
4-Bromofluorobenzene	107	60	140	
Toluene-d8	102	60	140	

J	The analyte was positively identified, but the quantitation was below the RL
U	Not detected at or above adjusted sample detection limit

Certificate of Analysis

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 18, 2018

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
ADW - ALICIA D. WALKER	AEO - ASHLEY E. OLSZEWSKI
ALM - AMANDA L. MUGRAGE	ALS - ADRIANE L. STEED
APH - ANDREW P. HOUT	AT - Asa R. Timmons
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BLG - BRENDA L. GREENWALT
BLR - BRANDON L. RICHARDS	BMP - Brett M. Price
BRG - BRENDA R. GREGORY	CAS - Craig A. Smith
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
COR - Corporate IT	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR	DTG - DOMINIC T. GEHRET
ECL - ERIC C. LAWSON	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	HRF - HEATHER R. FAIRCHILD
JAH - Jacque A. Hannum	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JST - JOSHUA S. TAYLOR
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JYH - JI Y. HU	KAK - KATHY A. KIRBY
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KMC - KAYLA M. CHEVALIER
KMG - KALEN M. GANDOR	KRA - KATHY R. ALBERTSON
KRP - KATHY R. PARSONS	LJH - Lacey J. Hendershot
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
LSJ - LAURA S. JONES	MAP - MARLA A. PORTER
MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	RLB - BOB BUCHANAN
RNP - RICK N. PETTY	SAV - SARAH A. VANDENBERG
SCA - SUEELLEN C. ADAMS	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	TB - TODD BOYLE
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	ZTB - ZACH T. BARNES

Microbac Laboratories Inc.
List of Valid Qualifiers
May 18, 2018

Qualkey: STD_ND=U

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidance.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	The analyte was positively identified, but the quantitation was below the RL
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated. The cooler temperature at receipt exceeded the regulatory guidance.
J,H1	The analyte was positively identified, but the quantitation was below the RL. Sample analysis performed past holding time
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,L	Not detected; sample reporting limit (RL) elevated due to interference
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Not detected at or above adjusted sample detection limit
U,CT1	Not detected. The cooler temperature at receipt exceeded regulatory guidance.
U,H1	Not detected; sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Y	This analyte is not on the laboratory's current scope of accreditation.
Z	Cannot be resolved from isomer - see below

Microbac Laboratories, Inc. - Erie

MICROBAC®

SUBCONTRACT ORDER

18E1320

SENDING LABORATORY:

Microbac Laboratories, Inc. - Erie
1962 Wager Road
Erie, PA 16509
Phone: 814.825.8533
Project Manager: Tina Sharer

RECEIVING LABORATORY:

Microbac - O
158 Starlite D
Marietta, OH
Phone: (740)

Microbac OVD
Received: 05/11/2018 10:30
By: BRENDA GREGORY

221000116371

Brenda Gregory

Project Info:

		Client:	Gowanda, Village of WWTP		
Project Name:	Priority Pollutant - Peter Coo	Project Type:	ENV-WasteWater	Report TAT:	8
Project No:	Peter Cooper for Priority Poll	Project Location:	New York	Due:	05/22/2018 15:00

Sample ID: 18E1320-01 **Matrix: Aqueous** **Sampled: 05/09/2018 13:30**

Analysis	Method	Analysis Due	Expires
Acid Extractables by EPA 625	**EPA 625**	**05/22/2018 12:00**	**05/16/2018 13:30**
2,4,6-Trichlorophenol	0.01 mg/L	2,4-Dichlorophenol	0.01 mg/L
2,4-Dimethylphenol	0.01 mg/L	2,4-Dinitrophenol	0.05 mg/L
2-Chlorophenol	0.01 mg/L	2-Methyl-4,6-Dinitrophenol	0.05 mg/L
2-Methylphenol (o-Cresol)	0.01 mg/L	2-Nitrophenol	0.01 mg/L
4-Chloro-3-Methylphenol	0.01 mg/L	4-Methylphenol (p-Cresol)	0.01 mg/L
4-Nitrophenol	0.01 mg/L	Pentachlorophenol	50 mg/L
Phenol	10 mg/L		
Sub 5/10/18			
Base Neutral Extractables by EPA 625	**EPA 625**	**05/22/2018 12:00**	**05/16/2018 13:30**
1,2,4-Trichlorobenzene	0.001 ppb	1,2-Diphenylhydrazine	0.01 ppb
2,4-Dinitrotoluene (2,4-DNT)	0.01 ppb	2,6-Dinitrotoluene (2,6-DNT)	0.01 ppb
2-Chloronaphthalene	0.01 ppb	3,3'-Dichlorobenzidine	50 ppb
4-Bromophenyl Phenyl Ether	10 ppb	4-Chlorophenyl phenylether	0.01 ppb
Acenaphthene	0.01 ppb	Acenaphthylene	0.01 ppb
Anthracene	0.01 ppb	Benzidine	0.05 ppb
Benzo(a)anthracene	10 ppb	Benzo(a)pyrene	10 ppb
Benzo(b)fluoranthene	10 ppb	Benzo(g,h,i)perylene	10 ppb
Benzo(k)fluoranthene	10 ppb	bis(2-Chloroethoxy)methane	10 ppb
bis(2-Chloroethyl)ether	10 ppb	bis(2-Chloroisopropyl)ether	10 ppb
bis(2-Ethylhexyl)phthalate	10 ppb	Butyl benzyl phthalate	10 ppb
Chrysene	10 ppb	Dibenzo(a,h)anthracene	10 ppb
Diethyl phthalate	10 ppb	Dimethyl phthalate	10 ppb
Di-n-butyl phthalate	10 ppb	Di-n-octyl phthalate	10 ppb
Fluoranthene	10 ppb	Fluorene	10 ppb
Hexachlorobenzene	10 ppb	Hexachlorobutadiene	0.0005 ppb
Hexachlorocyclopentadiene	10 ppb	Hexachloroethane	10 ppb
Indeno(1,2,3-cd)pyrene	10 ppb	Isophorone	10 ppb
Naphthalene	0.0005 ppb	Nitrobenzene	10 ppb
n-Nitroso-Dimethylamine	10 ppb	n-Nitrosodi-n-propylamine	10 ppb
n-Nitrosodiphenylamine	10 ppb	Phenanthrene	10 ppb
Pyrene	10 ppb		
Sub 5/10/18			

Sample ID: 18E1320-01 **Matrix: Aqueous** **Sampled: 05/09/2018 13:30**

Analysis	Method	Analysis Due	Expires
Five Peaks On BNA Scan	**EPA 625**	**05/22/2018 12:00**	**05/12/2018 13:30**
Five Peaks on scan	mg/L		
Sub 5/10/18			

Pesticides/PCBs by EPA 608	**EPA 608**	**05/22/2018 12:00**	**05/16/2018 13:30**
4,4'-DDD	0.04 µg/L	4,4'-DDE	0.04 µg/L
4,4'-DDT	0.04 µg/L	Aldrin	0.2 µg/L
alpha-BHC (alpha-Hexachlorocyclohexane)	0.2 µg/L	Arochlor-1016 (PCB-1016)	0.05 µg/L
Arochlor-1221 (PCB-1221)	0.05 µg/L	Arochlor-1232 (PCB-1232)	0.05 µg/L
Arochlor-1242 (PCB-1242)	0.05 µg/L	Arochlor-1248 (PCB-1248)	0.05 µg/L
Arochlor-1254 (PCB-1254)	0.05 µg/L	Arochlor-1260 (PCB-1260)	0.05 µg/L
beta-BHC (beta-Hexachlorocyclohexane)	0.004 µg/L	Chlordane (tech.)	0.4 µg/L
Chlorine - Total Residual	0.1 µg/L	delta-BHC	0.04 µg/L
Dieldrin	0.005 µg/L	Endosulfan I	0.04 µg/L
Endosulfan II	0.04 µg/L	Endosulfan Sulfate	0.04 µg/L
Endrin	0.04 µg/L	Endrin Aldehyde	0.04 µg/L
gamma-BHC (Lindane, gamma-Hexachloro	0.04 µg/L	Heptachlor	0.04 µg/L
Heptachlor Epoxide	0.04 µg/L	Toxaphene (Chlorinated camphene)	0.8 µg/L
Sub 5/10/18			

Sulfide by SM4500-S2 F	**SM 4500 S2 F-00**	**05/22/2018 12:00**	**05/16/2018 13:30**
Sulfide as S	5 mg/L		
Sub 5/10/18			

Thallium by EPA 200.8	**EPA 200.8, Rv. 5.4**	**05/22/2018 12:00**	**11/05/2018 13:30**
Thallium	0.001 mg/L		
Sub 5/10/18			

Sample ID: 18E1320-02 **Matrix: Aqueous** **Sampled: 05/10/2018 07:30**

Analysis	Method	Analysis Due	Expires
Five Peaks On VOC Scan	**EPA 624**	**05/22/2018 12:00**	**05/11/2018 07:30**
Five Peaks on scan			

Sub 5/10/18

Volatile Organics by EPA 624	**EPA 624**		**05/22/2018 12:00**	**05/24/2018 07:30**	
1,1,1,2-Tetrachloroethane	0.00031	mg/L	1,1,1-Trichloroethane	0.00039	mg/L
1,1,2,2-Tetrachloroethane	0.00076	mg/L	1,1,2-Trichloroethane	0.00061	mg/L
1,1-Dichloroethane	0.00043	mg/L	1,1-Dichloroethene (1,1-Dichloroethylen	0.00047	mg/L
1,1-Dichloropropene (1,1-Dichloropropy	0.0004	mg/L	1,2,3-Trichlorobenzene	0.00064	mg/L
1,2,3-Trichloropropane	0.00072	mg/L	1,2,4-Trichlorobenzene	0.001	mg/L
1,2,4-Trimethylbenzene	0.00039	mg/L	1,2-Dibromo-3-Chloropropane (DBCP)	0.00081	mg/L
1,2-Dibromoethane (Ethylene dibromide	0.00042	mg/L	1,2-Dichlorobenzene	0.00043	mg/L
1,2-Dichloroethane	0.00041	mg/L	1,2-Dichloropropane	0.00021	mg/L
1,3,5-Trimethylbenzene	0.00019	mg/L	1,3-Dichlorobenzene	0.005	mg/L
1,3-Dichloropropane	0.00009	mg/L	1,4-Dichlorobenzene	0.0006	mg/L
1,4-Dioxane	0	mg/L	1-Bromopropane	0.005	mg/L
2,2-Dichloropropane	0.00057	mg/L	2-Butanone (MEK)	0.005	mg/L
2-Chloroethyl vinyl ether	0.005	mg/L	2-Chlorotoluene	0.00066	mg/L
2-Hexanone	0.005	mg/L	3-Chloro-1-Propene	0	mg/L
4-Chlorotoluene	0.00045	mg/L	4-Isopropyltoluene (p-Isopropyltoluene)	0.00016	mg/L
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	Acetone	0.01	mg/L
Acrolein	0.05	mg/L	Acrylonitrile	0.05	mg/L
Benzene	0.005	mg/L	Bromobenzene	0.005	mg/L
Bromochloromethane	0.005	mg/L	Bromodichloromethane	0.005	mg/L
Bromoform	0.005	mg/L	Carbon disulfide	0	mg/L
Carbon tetrachloride	0.005	mg/L	Chlorobenzene	0.005	mg/L
Chlorodibromomethane (Dibromochlorc	0.005	mg/L	Chloroethane (Ethyl Chloride)	0.005	mg/L
Chloroform	0.005	mg/L	cis-1,2-Dichloroethene	0.005	mg/L
cis-1,3-Dichloropropene	0.005	mg/L	Dibromomethane (Methylene Bromide)	0.005	mg/L
Dichlorodifluoromethane (Freon-12)	0.005	mg/L	Ethylbenzene	5	mg/L
Hexachlorobutadiene	0.005	mg/L	Iodomethane (Methyl iodide)	0	mg/L
Isopropylbenzene (Cumene)	0.005	mg/L	m,p-Xylene	0	mg/L
m+p-xylene	0.01	mg/L	Methyl bromide (Bromomethane)	0.005	mg/L
Methyl chloride (Chloromethane)	0.005	mg/L	Methyl iso-butyl ketone (MIBK)	0	mg/L
Methyl tert-butyl ether (MTBE)	0.005	mg/L	Methylene chloride (Dichloromethane)	0	mg/L
Naphthalene	0.005	mg/L	n-Butyl Benzene	0.005	mg/L
n-Propylbenzene	0.005	mg/L	o-Xylene	0.005	mg/L
p-Isopropyltoluene	0	mg/L	p-Xylene	0	mg/L
sec-Butylbenzene	0.005	mg/L	Styrene	0.005	mg/L
tert-Butylbenzene	0.005	mg/L	Tetrachloroethylene (Perchloroethylene)	0.25	mg/L
Toluene	0.005	mg/L	trans-1,2-Dichloroethene	0.0005	mg/L
trans-1,3-Dichloropropene	0.005	mg/L	trans-1,4-Dichloro-2-butene	0.005	mg/L
Trichloroethene (Trichloroethylene)	0.001	mg/L	Trichlorofluoromethane (Freon 11)	0.005	mg/L
Vinyl acetate	0	mg/L	Vinyl chloride	0.005	mg/L

Microbac Laboratories, Inc. - Erie

MICROBAC®

SUBCONTRACT ORDER

18E1320

Sample ID: 18E1320-02 **Matrix: Aqueous** **Sampled: 05/10/2018 07:30**

Analysis	Method	Analysis Due	Expires
Sub 5/10/18			

Released By	Date	Received By	Date
Released By	Date	Received By	Date

MICROBAC®

Cooler ID 6371

COOLER TEMP >6° C LOG

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

5/11/18 BJG

pH Exceptions

pH Lot # HC727135

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

5/11/18 BJG

PRESERVATIVE EXCEPTIONS

__NONE

__AS NOTED

BJG 5/11/18

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

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Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

8092518

Gowanda, Village of WWTP

Andrew Carriero
27 East Main Street
Gowanda, NY 14070

Project Name: Peter Cooper - Semi-Annual Landfill Samples
Project / PO Number: N/A
Received: 09/27/2018
Reported: 11/16/2018

Analytical Testing Parameters

Client Sample ID: Peter Cooper
Sample Matrix: Aqueous
Lab Sample ID: 8092518-01
Collected By: A.Carriero
Collection Date: 09/27/2018 7:30

Inorganics	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 2540 D-97,-11							
Total Suspended Solids - TSS	**5.5**	5.0	mg/L		09/28/18 1500	10/01/18 0830	CAP

General Chemistry	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM 5210 B							
BOD5	**17**	4	mg/L		09/28/18 1241	10/03/18 1115	SS

Analyses Subcontracted to: Microbac Laboratories, Inc. - Ohio Valley

	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA351.2							
Nitrogen, Total Kjeldahl	**94.2**	4.00	mg/L		09/27/18 0730	10/23/18 1126	TMM

NH3	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA350.1							
Nitrogen, Ammonia	**126**	5.00	mg/L		09/27/18 0730	10/22/18 1607	TMM

	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA420.1							
Phenolics, Total	<0.00556	0.00556	mg/L		09/27/18 0730	10/08/18 1805	EPT

Sulfide	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: SM4500-S-(-2)-F-2000							
Sulfide	<1.00	1.00	mg/L		09/27/18 0730	10/02/18 1815	EPT

Definitions

RL: Reporting Limit

Microbac Laboratories Inc., Pittsburgh Division

CERTIFICATE OF ANALYSIS

8092518

Project Requested Certification(s)

Microbac Laboratories Inc., Pittsburgh Division	
10121	New York State Department of Health
Microbac Laboratories, Inc. - Ohio Valley	
460187	Commonwealth of Virginia (NELAC)
OH004	State of New Jersey (NELAC)

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

Reviewed and Approved By:

Tina Sharer

Administration

Reported: 11/16/2018 19:47

MICROBAC

CHAIN OF CUSTODY

Microbac Erie Division
1962 Wager Road
Erie, PA 16509
814.825.8533
eriemm@microbac.com

Page 1 of 1

8092518
Gowanda, Village of WWTP

Client /Company Name: Village of Gowanda Sewer Dept		Contact Name: Andrew Carriero	
Address: 27 E. Main Street		Bill To/PO#:	
City/State/Zip: Gowanda, NY 14070			
Phone: 716-532-5931	Email/Fax: gowandawwtp@mail.com	Potential Hazards: Non-Hazard [X] Hazard [ ] Radioactive [ ]	
Project Name/ID: **Peter Cooper** SEMI-ANNUAL LANDFILL SAMPLES		Disposal: Dispose of [X] Return [ ] Retain [ ]	
Sampled By: A. CARRIERO	Due Date:	Compliance Sample: Yes [X] No [ ]	State: **NY**
Shipped By: Microbac Courier	Tracking #:	PWSID#:	Monitoring Period:
Type Code: G-Grab C-Composite	Comp. Start: 9-26-18/7:30A	Comp. Stop: 9-27-18/7:30A	Preservatives

Matrix Code: DW-Potable water WW-Nonpotable water SS-Soil/Sludge F-Food S-Swab O-Other

	Sample Identification	Date Taken	Time Taken	Type G	Type C	Matrix	Tot. # Cont.	None	HNO3	H2SO4	NaOH	HCl	Thio	Other	Dist. NH3 :: TKN	Phenolics, Total by EPA 420.1	Sulfide by SM4500-S2 F	BOD :: SO4 :: TSS						
	Peter Cooper	9-27-18	7:30A		X	WW	4	1	1	1				1	X	X	X	X						

Instructions/Comments:

Relinquished By: A. Carriero	Date/Time: 9-27-18/	Received By: Steven Schiller	Date/Time: 9-27-18 0900	Temp 3.4 °C
Relinquished By: Steven Schiller	Date/Time: 9-27-18 1300	Received By: Carmen Valva	Date/Time: 9-27-18 1300	Iced: (Y) N
Relinquished By:	Date/Time:	Received By:	Date/Time:	Intact: (Y) N
Relinquished By:	Date/Time:	Received By:	Date/Time:	

QC270 V6

APPENDIX E

2018 Operation, Maintenance, and Monitoring Costs to the Village

PETER COOPER SITE
138 Palmer Street, Gowanda, NY 14070
Operation, Maintenance, and Monitoring Costs - CY 2018

Leachate Pump Station Electric

Electrical Service (NYSEG) 1003-3457-754

Payment Date	Service Dates	Amount
1/23/2018	12/6/17 - 1/3/18	$ 149.36
2/15/2018	1/4/18 - 1/31/18	$ 196.13
3/26/2018	2/1/18 - 3/12/18	$ 165.23
4/12/2018	3/13/18 - 4/3/18	$ 93.69
5/16/2018	4/4/18 - 5/4/18	$ 190.64
6/18/2018	5/5/18 - 6/6/18	$ 98.92
7/15/2018	6/7/18 - 7/7/18	$ 73.82
8/21/2018	7/8/18 - 8/4/18	$ 64.14
9/18/2018	8/5/18 - 9/7/18	$ 71.63
10/16/2018	9/8/18 - 10/3/18	$ 84.84
11/19/2018	10/4/18 - 11/2/18	$ 160.25
12/18/2018	11/3/18 - 12/5/18	$ 185.26
TOTALS		**$ 1,533.91**

Sampling Labor

Village of Gowanda Sewer Employee: April 2018@ $21.85/hr plus 53.87% fringe.

Month	Hrs	Amount
Jan	5.5	$ 184.91
Feb	5.0	$ 168.10
Mar	4.5	$ 151.29
Apr	6.0	$ 201.72
May	4.5	$ 151.29
Jun	5.0	$ 168.10
Jul	6.0	$ 201.72
Aug	5.5	$ 184.91
Sep	5.0	$ 168.10
Oct	8.5	$ 285.77
Nov	7.0	$ 235.34
Dec	5.5	$ 184.91
TOTALS	**68**	**$ 2,286.16**

As itemized

As itemized: Mowing @ $50/hr and Microbac Sampling Invoices. Cellular data for monitoring system at Peter Cooper Site

Service/Item	Amount
Mowing 8/24/18	$ 175.00
(3.5 hours)	
Microbac 6/20/18	$ 734.93
Microbac 11/16/18	$ 111.59
Inv #AA8K02553	
Cyclops Monitoring System	
12 mo. cellular data	$ 360.00
monitors high level	
and daily flows	
TOTALS	**$ 1,381.52**

Admin Monitor & Maint.

Includes office support to manage, process, and document Peter Cooper expenses, and prepare report @ $75/hour

Month	Hrs	Amount
Jan	0.25	$ 18.75
Feb	0.25	$ 18.75
Mar	2.25	$ 168.75
Apr	0.25	$ 18.75
May	0.25	$ 18.75
Jun	0.25	$ 18.75
Jul	0.25	$ 18.75
Aug	0.25	$ 18.75
Sep	0.25	$ 18.75
Oct	0.25	$ 18.75
Nov	0.25	$ 18.75
Dec	0.25	$ 18.75
TOTALS	**5**	**$ 375.00**

Peter Cooper Leachate Flow

Flow per month as documented by Sewer Flow Meter at Peter Cooper Site.

Month	Flow	Amount
Jan	349.435	$ 174.72
Feb	350.665	$ 175.33
Mar	265.873	$ 132.94
Apr	436.236	$ 218.12
May	261.065	$ 130.53
Jun	138.736	$ 69.37
Jul	109.406	$ 54.70
Aug	104.324	$ 52.16
Sep	104.104	$ 52.05
Oct	301.822	$ 150.91
Nov	386.179	$ 193.09
Dec	427.24	$ 213.62
TOTALS	**3235.09**	**$1,617.54**

Electric	$ 1,533.91
Sampling Labor	$ 2,286.16
Mowing & Microbac	$ 1,381.52
Admin	$ 375.00
Flow	$ 1,617.54
TOTAL 2018	**$ 7,194.13**

APPENDIX F

Modifications to SIU Discharge Permit

Landfill Leachate Analytical Sampling
EFFECTIVE 1/1/13

Sampling Location (all parameters): Pretreatment building

Frequency: Annual (January)

Parameter	Sample Type
USEPA Priority Pollutants	Grab
METALS	
Arsenic	
Calcium	
Total Chromium	
Hexavalent Chromium	
Cooper	
Cyanide	24-hr. Composite
Lead	
Mercury	
Nickel	
Silver	
Zinc	

Frequency: Semi-Annual (January, June)

Parameter	Sample Type
BOD/5	Composite
Ammonia	
Phenols	
Sulfates	
Sulfides (collected both prior to and following pre-treatment)	24-hr. Composite
TKN	
TSS	

Frequency: Weekly

Parameter	Sample Type
PH (field measured)	24-hr. composite
Dissolved Oxygen	Grab

The samples collected by the Permittee or its authorized representative shall be analyzed for the parameters listed in Section 1. Frequency and types of samples to be taken are indicated below:

TABLE 2 (Sampling and Monitoring)

Parameter	Sampling Location	Frequency	Sample Type
USEPA Priority Pollutant Volatiles, Semi-Volatiles	MH C-116	Prior to initial discharge, Then quarterly for the 1st year, if parameters warrant (USEDA PP, VOCS, SVOCS)	Grab
Sulfates	MH C-116	Weekly the 1st month; then monthly the 1st year	Composite
Sulfides (collected both prior to and following pre-treatment)		Weekly the 1st month; then monthly the 1st year If test results warrant	Composite
BOD/5 TSS Phenols TKN Ammonia PH (field measured)		Weekly the 1st month; Then monthly the 1st year, if test results warrant	Composite 24/hr. Composite
Metals: Arsenic Calcium Total Chromium Hexavalent Chromium Cooper Cyanide Lead Mercury Nickel Silver Zinc	MH C-116	Prior to initial discharge, then quarterly for the 1st year, if test results warrant	24 hr. composite
Dissolved Oxygen	MH C-116	Daily the 1st week, then weekly thereafter	GRAB
Total Organic Halogen	MHC-116	Prior to discharge, monthly for the first year	GRAB

* An updated Complete Discharge Analysis consisting of all parameters listed above, must be provided to the Village Sewer Department prior to the initial discharge.

1. Sampling frequency shall be determined by the Superintendent based on the nature.

APPENDIX G

Notice of Deletion of the Peter Cooper Superfund Site
84 FR 36865; NPL 2019-16065 (July 30, 2019)

EPA–APPROVED REGULATIONS, TECHNICAL MEMORANDA, AND STATUTES IN THE MARYLAND SIP—Continued

Citation	Title/subject	State effective date	EPA approval date	Additional explanation/ citation at 40 CFR 52.1100
26.11.19.26–1	Control of Volatile Organic Compound Emissions from Fiberglass Boat Manufacturing.	9/28/2015	12/23/2016, 81 FR 94259.	New Regulation.
*	*	*	*	*
26.11.31	**Quality Assurance Requirements for Opacity Monitors (COMs)**			
*	*	*	*	*
Annotated Code of Maryland				
*	*	*	*	*

* * * * * (e) * * *

Name of non-regulatory SIP revision	Applicable geographic area	State submittal date	EPA approval date	Additional explanation
*	*	*	*	*
2011 Base Year Emissions Inventory for the 2008 8-Hour Ozone National Ambient Air Quality Standard.	Baltimore, Maryland 2008 Ozone Moderate Nonattainment Area.	12/30/2016	8/9/2018, 83 FR 39365	See § 52.1075(r).
*	*	*	*	*
Regional Haze Five-Year Progress Report.	Statewide	8/9/2017	11/26/2018, 83 FR 60363.	
*	*	*	*	*

Editorial Note: This document was received for publication by the Office of the Federal Register on July 18, 2019.

[FR Doc. 2019–15655 Filed 7–29–19; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

[EPA–HQ–SFUND–1998–0006; FRL–9997–20–Region 2]

National Oil and Hazardous Substance Pollution Contingency Plan National Priorities List: Deletion of the Peter Cooper Superfund Site

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: The Environmental Protection Agency (EPA), Region 2, is publishing a direct final notice of deletion of the Peter Cooper Superfund Site (Site) located in the Village of Gowanda, Cattaraugus County, New York from the National Priorities List (NPL). The NPL, promulgated pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA),, which is the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This direct final deletion is being published by the EPA with the concurrence of the State of New York, through the Department of Environmental Conservation (NYSDEC), because the EPA has determined that all appropriate response under CERCLA, other than operation and maintenance, monitoring, and five-year reviews, have been completed. However, this deletion does not preclude future actions under Superfund.

DATES: This direct final deletion will be effective September 30, 2019 unless the EPA receives adverse comments by August 29, 2019. If adverse comments are received, the EPA will publish a timely withdrawal of the direct final deletion in the **Federal Register** informing the public that the deletion will not take effect.

ADDRESSES: Submit your comments, identified by Docket ID no. EPA–HQ–SFUND–1998–0006, by one of the following methods:

- *https://www.regulations.gov.* Follow on-line instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system). For

additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www2.epa.gov/dockets/commenting-epa-dockets.*

- *Email: henry.sherrel@epa.gov.*
- *Mail:* Sherrel Henry, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, 290 Broadway, 20th Floor, New York, New York 10007–1866.
- *Hand delivery:* Superfund Records Center, 290 Broadway, 18th Floor, New York, NY 10007–1866 (telephone: (212) 637–4308). Such deliveries are only accepted during the Docket's normal hours of operation (Monday to Friday from 9:00 a.m. to 5:00 p.m.) excluding federal holidays and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID no. EPA–HQ–SFUND–1998–0006. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *https://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *https://www.regulations.gov* or email. The *https://www.regulations.gov* website is an ''anonymous access'' system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through *https://www.regulations.gov,* your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the *https://www.regulations.gov* index. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in the hard copy. Publicly available docket materials are available either electronically in *https://www.regulations.gov* or in hard copy at:

U.S. Environmental Protection Agency, Region 2, Superfund Records Center, 290 Broadway, Room 1828, New York, New York 10007–1866, (212) 637–4308, Hours: Monday through Friday: 9:00 a.m. through 5:00 p.m.

Information for the Site is also available for viewing at the Site Administrative Record Repositories located at: Gowanda Free Library, 56 W. Main Street, Gowanda, New York 14138, (716) 532–9449, Hours: Monday through Friday: 9:00 a.m. through 5:00 p.m.

FOR FURTHER INFORMATION CONTACT: Ms. Sherrel D. Henry, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, 290 Broadway, 20th Floor, NY, NY 10007–1866, (212) 637–4273, email: *henry.sherrel@epa.gov.*

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

EPA Region 2 is publishing this direct final Notice of Deletion of the Peter Cooper Superfund Site (Site) from the NPL. The NPL constitutes Appendix B of 40 CFR part 300, which is the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which the EPA promulgated pursuant to section 105 of CERCLA. The EPA maintains the NPL as the list of sites that appear to present a significant risk to public health, welfare, or the environment. Sites on the NPL may be the subject of remedial actions financed by the Hazardous Substance Superfund (Fund). As described in 300.425(e) (3) of the NCP, sites deleted from the NPL remain eligible for Fund-financed remedial actions if future conditions warrant such actions.

Section II of this document explains the criteria for deleting sites from the NPL. Section III discusses procedures that the EPA is using for this action. Section IV discusses the Site and demonstrates how it meets the deletion criteria. Section V discusses EPA's action to delete the Site from the NPL unless adverse comments are received during the public comment period.

II. NPL Deletion Criteria

The NCP establishes the criteria that EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425(e), sites may be deleted from the NPL where no further response is appropriate. In making such a determination pursuant to 40 CFR 300.425(e), EPA will consider, in consultation with the state, whether any of the following criteria have been met:

i. Responsible parties or other persons have implemented all appropriate response actions required;

ii. all appropriate Fund-financed response under CERCLA has been implemented, and no further response action by responsible parties is appropriate; or

iii. the remedial investigation has shown that the release poses no significant threat to public health or the environment and, therefore, the taking of remedial measures is not appropriate.

Pursuant to CERCLA section 121 (c) and the NCP, EPA conducts five-year reviews to ensure the continued protectiveness of remedial actions where hazardous substances, pollutants, or contaminants remain at a site above levels that allow for unlimited use and unrestricted exposure. EPA conducts such five-year reviews even if a site is deleted from the NPL. EPA may initiate further action to ensure continued protectiveness at a deleted site if new information becomes available that indicates it is appropriate. Whenever there is a significant release from a site deleted from the NPL, the deleted site may be restored to the NPL without application of the hazard ranking system.

III. Deletion Procedures

The following procedures apply to deletion of the Site:

(1) EPA consulted with the State of New York prior to developing this direct final Notice of Deletion and the Notice of Intent to Delete co-published today in the ''Proposed Rules'' section of the **Federal Register**.

(2) EPA has provided New York State 30 working days for review of this notice and the parallel Notice of Intent to Delete prior to their publication today, and the state, through the NYSDEC, has concurred on the deletion of the Site from the NPL.

(3) Concurrently with the publication of this direct final Notice of Deletion, a notice of the availability of the parallel Notice of Intent to Delete is being published in a major local newspaper, *Dunkirk Observer.* The newspaper notice announces the 30-day public comment period concerning the Notice

of Intent to Delete the Site from the NPL.

(4) EPA placed copies of documents supporting the proposed deletion in the deletion docket and made these items available for public inspection and copying at the Site information repositories identified above.

(5) If adverse comments are received within the 30-day public comment period on this deletion action, EPA will publish a timely notice of withdrawal of this direct final Notice of Deletion before its effective date and will prepare a response to comments and continue with the deletion process on the basis of the Notice of Intent to Delete and the comments already received.

Deletion of a site from the NPL does not itself create, alter, or revoke any individual's rights or obligations. Deletion of a site from the NPL does not in any way alter EPA's right to take enforcement actions, as appropriate. The NPL is designed primarily for informational purposes and to assist EPA management. Section 300.425(e)(3) of the NCP states that the deletion of a site from the NPL does not preclude eligibility for future response actions, should future conditions warrant such actions.

IV. Basis for Site Deletion

The following information provides EPA's rationale for deleting the Site from the NPL:

Site Background and History

The Peter Cooper Site, EPA ID No. NYD980530265, is located off Palmer Street, in the Village of Gowanda, Cattaraugus County, New York, approximately 30 miles south of Buffalo, New York. The Site consists of an inactive landfill and land associated with the former Peter Cooper Corporation (PCC) animal glue and adhesives manufacturing plant. The Site is bound to the north by Cattaraugus Creek (Creek), to the south by Palmer Street, to the west by a former hydroelectric dam and wetland area, and to the east by residential properties. Regionally, the Village of Gowanda is located both in Erie County and Cattaraugus County and is separated by Cattaraugus Creek. In Erie County, the Village of Gowanda is included in the Town of Collins. The Town of Collins is bordered by the Seneca Nation of Indians Cattaraugus Reservation to the west. In Cattaraugus County, the Village of Gowanda is in the Town of Persia. The Site is located in an area characterized by mixed industrial-commercial/residential usage.

For purposes of the remedial investigation and feasibility study (RI/FS), the Site was divided into two sections. The western section, called the inactive landfill area (ILA), is approximately 15.6 acres in size and includes an additional five acres referred to as the ''elevated fill subarea.'' The westernmost portion of the elevated fill subarea is located on property owned by the New York State Electric & Gas Corporation (NYSEG). The eastern section of the Site, the former manufacturing plant area (FMPA), is approximately 10.4 acres.

From 1904 to 1972, PCC and its predecessor, Eastern Tanners Glue Company, manufactured animal glue at the Site. When the animal glue product line was terminated, PCC continued to produce synthetic industrial adhesives until the plant closed in 1985. The wastes from PCC's glue production were disposed of on the elevated fill subarea. Between 1925 and October 1970, PCC used the northwest portion of the property to pile sludge remaining after the animal glue manufacturing process. These wastes, known as ''cookhouse sludge'' because of a cooking cycle that occurred just prior to extraction of the glue, are derived primarily from chrome-tanned hides obtained from tanneries. The waste material has been shown to contain elevated levels of chromium, arsenic, zinc, and several organic compounds.

In June 1971, the New York State Supreme Court (8th J.D. Cattaraugus County) ordered PCC to remove all or part of the waste pile and terminate discharges into the Creek. In 1972, PCC reportedly removed approximately 38,600 tons of waste pile material and transferred it to a separate site in Markhams, New York. Between 1972 and 1975, the remaining waste pile at the Site was graded by PCC, covered with a 6-inch clay barrier layer and 18 to 30 inches of soil, and vegetated with grass. Stone rip-rap and concrete blocks were placed along the bank of the Creek to protect the fill material from scouring or falling into the Creek.

In July 1976, the assets of the original PCC, including the manufacturing plant and property located in Gowanda, were purchased by Rousselot Gelatin Corporation and its parent, Rousselot, S.A., of France. Rousselot Gelatin was renamed Peter Cooper Corporation, and this newly-formed PCC sold the Site to JimCar Development, Inc. in April 1988. The property was subsequently transferred to the Gowanda Area Redevelopment Corporation (GARC) in 2009. Excluding the portion of the Site owned by NYSEG, the remainder of the property is presently owned by GARC. From 1981 to 1983, NYSDEC conducted several investigations at the facility and identified the presence of arsenic, chromium and zinc in soil and sediment samples. As a result of this investigation, NYSDEC oversaw PCC's development of an RI/FS for the Site. However, because the waste detected at the Site did not meet the New York State statutory waste definition in effect in 1991 for an inactive hazardous waste disposal site, NYSDEC removed the Site from its Registry of Inactive Hazardous Waste Sites, and a remedy was not selected.

In 1996, EPA collected and analyzed soil, groundwater, surface water, and sediment samples from the Site. Results of the sampling and analysis confirmed contamination, including the presence of arsenic, chromium, and other hazardous substances.

During these Site assessments, EPA personnel observed that the existing retaining wall was subject to severe erosion. It was determined that the retaining wall and rip-rap had to be repaired or upgraded to prevent the continued erosion of landfill materials into the Creek. On October 24, 1996, EPA and NYSEG entered into an administrative order on consent (AOC). Pursuant to the AOC, NYSEG installed approximately 150 feet of rip-rap revetment along the south bank of the Cattaraugus Creek and adjacent to the landfill to prevent further erosion of materials from the landfill into the Creek.

Based on this information, the Site was proposed to the NPL on September 25, 1997 (62 FR 50450) and placed on the NPL on March 6, 1998 (63 FR 11332).

Remedial Investigation and Feasibility Study

In April 2000, EPA issued a unilateral administrative order (UAO) to fourteen respondents to perform the RI/FS of the Site, subject to EPA oversight. Media sampled during the RI included landfill gas, groundwater, surface water, sediment, soil, waste material, and seepage emanating from the landfill.

From 2000 to 2001, the UAO respondents, through their consultants, Benchmark Environmental Engineering and Science PLLC (Benchmark) and Geomatrix Consultants, performed a comprehensive RI to define the nature and extent of contamination at the Site. The final RI report was submitted to EPA in November 2003. The scope of the RI included the following activities: the replacement of four wells from the existing network of 10 monitoring wells in the ILA and the installation of six new wells in the FMPA; surface water and sediment investigations of the Creek; sludge fill characterization of the

ILA, by conducting three different activities (geophysical surveys, test pits, and soil borings) to establish the limits of buried waste fill material; an existing landfill cover evaluation by excavating 24 test holes to determine cover system thickness and characteristics; a surface soil investigation of the ILA and FMPA, consisting of 30 soil samples collected from zero to six inches below ground surface (bgs); a subsurface soil investigation of the ILA and FMPA consisting of 23 soil samples collected from three to 12 feet bgs; a landfill gas investigation of the elevated fill area of the ILA; and a leachate seep investigation of the elevated fill area of the ILA.

An FS was then completed by the UAO respondents, and a report was submitted to EPA in June 2005. The FS Report identified and evaluated remedial alternatives to address soil contamination for the Site, consistent with the guidelines presented in Guidance for conducting RI/FS under CERCLA. A preferred alternative was presented to the public for review and comment in July 2005. Results of the RI and FS were summarized in the Record of Decision (ROD) issued by EPA in September 2005.

Concurrent with completion of the RI/FS activities, the Village of Gowanda in association with the University at Buffalo Center for Integrated Waste Management developed a Reuse Assessment and Concept Plan for the Site, in which it was concluded that the ''highest and best use'' of the property would be as a multi-use recreational facility. The Reuse Assessment and Concept Plan, funded in part by the USEPA through its Superfund Redevelopment Initiative, envisions a publicly-available Site incorporating elements such as a walking/biking trail, fishing access, outdoor picnic areas, small boat launch, and other related recreational features.

Selected Remedy

Based upon the results of the RI/FS, a Proposed Plan, and a Public Meeting, a Remedy was selected in September 2005. For this Site, remedial action objectives (RAOs) were only established for soil. The RAOs for soil are (1) to reduce or eliminate any direct contact threat associated with the contaminant soils/fill, (2) to minimize or eliminate contaminant migration from contaminated soils to the groundwater and surface water, and (3) to minimize or eliminate contaminant migration from groundwater to the Creek.

The elements of the selected remedy are:

- Excavating three hot spot areas and consolidating waste from these areas within the elevated fill subarea, capping the five-acre elevated fill subarea of the inactive landfill area with a low permeability, equivalent design barrier cap, consistent with the requirements of 6 New York Codes, Rules and Regulations (NYCRR) Part 360, including seeding with a mixture of seeds to foster natural habitat;
- Conducting post-excavation confirmatory soil sampling;
- Backfilling of excavated areas with clean fill; collecting the leachate seeps, pretreating the leachate as necessary, then discharging the leachate to the public owned treatment works (POTW) collection system for further treatment and discharge. As a contingency, if treatment of the leachate seep at the POTW is not available, the leachate would be treated and discharged to Cattaraugus Creek. Since the installation of the cap and groundwater diversion system (described below) should reduce leachate generation, the volume of seep leachate requiring treatment is anticipated to be reduced or nearly eliminated over time;
- Installing a groundwater diversion system to limit groundwater migration through the elevated fill subarea. The remedy provides for the potential that if additional data collected in the remedial design phase of the project support the conclusion that installation of a diversion wall will result in a minimal increase in the collection of contaminants by the leachate collection system, the diversion wall would not be installed;
- Installing a passive gas venting system for proper venting of the five-acre elevated fill subarea of the ILA;
- Stabilizing the banks of the Creek;
- Performing long-term operation and maintenance including inspections and repairs of the landfill cap, gas venting, and leachate systems;
- Performing air monitoring, surface water and groundwater quality monitoring; and
- Evaluating Site conditions at least once every five years to determine if the remedy remains protective.

The remedy also included institutional controls such as restrictive covenants and environmental easements for limiting future use of the Site and the groundwater to ensure that the implemented remedial measures will not be disturbed and that the Site will not be used for purposes incompatible with the completed remedial action. The institutional controls will be managed, in part, through a Site Management Plan (SMP) to ensure appropriate handling of subsurface soils during redevelopment.

To ensure that engineering controls and institutional controls remain in place and effective for the protection of public health and the environment, an annual certification, commencing from the date of implementation, has been required to be performed by the parties responsible for implementing the remediation.

Consistent with the future use of the property, following issuance of the ROD, the Village of Gowanda and the UAO recipients entered into discussions concerning the Village's redevelopment goals. An agreement was reached, and GARC took ownership of the Site and agreed to perform certain post-remedial operation and maintenance and monitoring activities in exchange for provision of specific, non-remedial construction activities and funding by the respondents to facilitate park redevelopment. Non-remedial construction activities that were slated to be performed by the UAO recipients, concurrent with remedial activities, are listed below.

- Removal of up to 1,000 tons of non-hazardous construction and demolition debris from the former manufacturing plant area of the site, with disposal of the materials beneath the elevated fill subarea cover (in a manner to prevent settlement) or off-site disposal at a permitted disposal facility.
- Construction of a clean utility corridor (*i.e.,* waterline) to facilitate utility service to a future, multi-use building, pavilion, or other park development.
- Elevated fill subarea cover system grading and contouring to facilitate Site development plans. This involved creating a benched area along the Creek side of the landfill that may provide a level area for future construction of a bike or walking path.

Response Actions

In 2009, EPA concluded consent decree (CD) negotiations with a subgroup of the UAO recipients, identified as the performing settling defendants (PSDs), related to the performance of the design and implementation of the remedy called for in the ROD. On February 12, 2009, the CD was entered in United States District Court. On March 15, 2009, Benchmark was approved as the supervising contractor to conduct the remedial design (RD) and implement the remedy at the Site. The ROD included provisions for the evaluation of the construction of a diversion wall around the elevated fill area in the event the wall would affect the planned remedial

actions. In accordance with the ROD, EPA and NYSDEC concurred with the findings of an analysis performed by the PSDs, prior to the entry of the CD, that the installation of an upgradient groundwater diversion wall around the elevated fill subarea would not materially alter the effectiveness of the planned remedial measures; therefore, the diversion wall component of the ROD was not implemented.

In accordance with the requirements of the CD, the PSDs prepared a RD work plan. The RD work plan outlined the following remedial construction measures: Mobilization; site preparation, including hotspot excavation; groundwater/seep collection; and cover system construction (barrier layer material placement and compaction, topsoil and seeding, and passive gas venting). In 2009, the RD report and design plans and specifications were implemented under a design build contract for Site remediation. The RD report identified materials to be employed for major remedial components, construction requirements, quality control requirements, and measures to protect workers, the surrounding community, and the environment during the remedial work.

In the Summer of 2009, the PSDs conducted certain preparatory activities at the Site to facilitate the remedial construction. These activities included the removal of small trees, shrubs, brush, and stumps. Clearing and grubbing in and around the area of the elevated fill area was performed with a hydro ax. The staged trees, stumps, and brush were ground into mulch and were hauled off-site for processing at a permitted facility.

The excavation of the three ''hotspot'' areas of contaminated soil/fill was completed in August 2009. Soil excavated from these impacted areas was hauled to the elevated fill subarea of the ILA for placement and compaction prior to placing the soil cover system. The excavated areas were then backfilled with clean soil. Confirmatory sampling of the excavation sidewalls and bottom indicated arsenic and VOC concentrations that remained were below the Site cleanup goals.

Construction of the seep/groundwater collection system was substantially completed in November 2009. The collection system includes the Creek bank regrading and bedrock channel excavation, the pump station installation, the pretreatment building construction, the force main piping, and the sanitary sewer tie-in. The seep/groundwater collection system was placed into full-time operation in May 2010, with operation and maintenance duties transferred to GARC.

The remedial measures for the elevated fill subarea involved re-grading the adjacent bank (excluding the riprap-stabilized area on NYSEG's property) and removal of concrete blocks and boulders to provide a more uniform slope for reduced erosion potential. A seep collection trench was then excavated into the surface of the weathered shale bedrock at the toe of the slope to intercept and collect the seeps. A perforated drainage pipe and granular media envelope collect and transmit water to a packaged leachate pump station. The slope of the regraded bank is lined with a geocomposite drainage layer, leading to the collection trench, covered by a geomembrane liner to prevent seep breakout and mitigate Creek and surface water infiltration during high water conditions. The liner extends vertically to the 100-year floodplain elevation and is protected from erosion by a surface layer of medium and large riprap over a non-woven geotextile fabric and gravel bed. Collected seep water and shallow groundwater are conveyed from the pump station by a force main to a pretreatment building where an oxidant delivery system is available to mitigate hydrogen sulfide odors, as needed. Pretreated seeps/groundwater is discharged to the Village of Gowanda's sanitary sewer collection system on Palmer Street for treatment at the Village POTW consistent with the approved discharge permit.

The final cap system, installed from August 2009 to July 2010, includes all the construction components in the approved RD report. Containment/isolation with soil cover enhancement involved the following: clearing and grubbing the approximate five-acre elevated fill subarea; moderate regrading and/or filling of low spots across the five-acre area to facilitate runoff; supplementing existing cover to provide for a minimum 18-inch thickness of a recompacted soil barrier layer and placement of six inches of topsoil over the five-acre area; and reseeding of the elevated fill subarea cover to provide for a good stand of grass that will foster natural habitat. Cover soils were tested to assure conformance with contaminant levels established under state law.

Following construction of the cap, five passive gas vents were installed through the sludge fill in the elevated fill subarea to relieve gas buildup beneath the cover system. The vents were constructed with individual risers that extend to a sufficient height above ground surface to promote atmospheric dispersion of odor-causing constituents and prevent direct inhalation of vented gases by trespassers or future recreational Site users.

EPA and NYSDEC conducted a final inspection of the constructed remedy on September 9, 2010. Based on the results of the inspection, it was determined that the Site construction was complete and that the remedy was implemented consistent with the ROD. In the final inspection EPA concluded that the PSDs constructed the remedy in accordance with the RD plans and specifications, and no further response (other than the operation and maintenance of the cap and cover, and long-term groundwater monitoring) is anticipated. EPA approved the remedial action report (RAR) for the Site on June 17, 2011. The RAR documented all the remedial activities conducted at the Site and included as-built drawings to document Site conditions at completion. The PSDs and GARC, the latter being the current property owner, are sharing responsibilities for management of the Site in accordance with the SMP. The ROD called for the development of a SMP to provide for the proper management of all post-construction remedy components including an environmental easement that describes the institutional controls incorporated into the remedy and the requirement for certification that the institutional controls remain effective and in place.

As mention above, the environmental easement and/or restrictive covenant was designed to restrict the use of on-Site groundwater as a source of potable or process water and to restrict activities on the Site that could compromise the integrity of the cap. The restrictions are memorialized in an environmental easement filed with the Cattaraugus County Clerk on March 30, 2009.

Currently all areas of the Site designated for passive recreational use have been covered with a minimum of one foot of clean, vegetated cover soil or pavement, and those designated for active recreational use have been covered with a minimum of two feet of clean, vegetated cover soil or pavement. Inspections were performed by GARCs designated engineer to verify that the minimum required soil thicknesses were achieved. As part of the redevelopment efforts, the following Park amenities and improvements were constructed during 2016 and 2017:

- Regulation (90 foot diamond) ballfield:
- Playground and equipment
- Paved parking area and extension of asphalt path
- Ballfield backstop

- 24′ x 24′ gazebo

Verification of Cleanup Levels

Data are collected and reviewed to ensure that the RAOs are met following implementation of the remedial action. For this Site, RAOs were only established for soil. The RAOs for soil are (1) to reduce or eliminate any direct contact threat associated with the contaminant soils/fill, (2) to minimize or eliminate contaminant migration from contaminated soils to the groundwater and surface water, and (3) to minimize or eliminate contaminant migration from groundwater to the Creek. These RAOs and the associated cleanup levels set forth in the ROD were met upon completion of the remedial construction, as documented in the RAR for the Site dated September 2010. Because of the limited remaining risks from exposure to the groundwater and surface water at this Site, institutional controls are deemed necessary to address any potential future exposure. Specifically, deed restrictions have been imposed to prevent the use of groundwater as a source of potable or process water unless groundwater quality standards are met. Long-term monitoring will be conducted to ensure that the selected Site remedy is protective of human health and the environment. Groundwater and surface water will be monitored as part of the post-construction response activities to ensure that the contamination is attenuating, and groundwater quality continues to improve.

Groundwater monitoring was performed during 10 separate events in June 2011, January 2012, June 2012, January 2013, June 2013, June 2014, October 2015, October 2016, November 2017 and October 2018. Groundwater samples were collected from five monitoring wells (MWs) at the Site. Samples were analyzed for inorganic parameters (total metals), VOCs (chlorinated aliphatics only), and water quality parameters (ammonia, hardness, chloride, total sulfide). Total metals analyses included hexavalent chromium, total chromium, arsenic, and manganese. Groundwater results were compared to the more stringent of the State or federal promulgated standards.

VOC concentrations were either not detected (nondetect) or below the state Groundwater Quality Standards and Guidance Values (GWQS/GV) at all monitoring well locations, with the exception of tetrachloroethene (PCE) and *cis*-1,2-dichloroethene (*cis*-1,2-DCE). PCE was detected above the GWQS of 5 ug/L, with concentrations ranging from 5.9 micrograms per liter (ug/L) to 13 ug/L. *Cis*-1,2-DCE was detected above the GWQS of 5 ug/L with concentrations ranging from 5.4 ug/L to 8.5 ug/L. These sporadic, slight VOC exceedances of GWQS criteria are not considered significant, and do not constitute a contaminant plume requiring response action.

Concentrations reported for hexavalent chromium were nondetect or below GWQS at all monitoring locations. Total chromium was reported as nondetect or below the GWQS of 0.05 milligram/liter (mg/L) at all monitored locations, with the exception of two minor exceedances of 0.056 mg/L and 0.054 mg/L. These sporadic, slight exceedances of total chromium GWQS criteria are not considered significant.

Arsenic was reported above the federal Maximum Contaminant Levels (MCLs) of 0.010 mg/L, with concentrations ranging from 0.011 mg/L to 0.043 mg/L. Arsenic was also detected in the upgradient well, so the exceedances in on-site wells are not considered to be Site-related. Manganese was detected above the GWQS of 0.03 mg/L with concentrations ranging from 0.37 mg/L to 6.6 mg/L. The manganese screening criteria is a secondary MCL. Secondary MCLs do not require regulatory actions since they represent aesthetic parameters. They will continue to be monitored.

The water quality parameters reported for all sampling events were nondetect or below the GWQS for sulfide and chloride at all sampling locations. Ammonia was detected above the GWQS of 2 mg/L during all monitoring events at concentrations ranging from 3.5 mg/L to 10.8 mg/L. However, ammonia was also detected in the upgradient monitoring well, so the exceedances are not considered to be Site-related. The groundwater data review indicates that the low levels of contamination in Site groundwater are attenuating and groundwater quality has improved compared to baseline levels measured prior to commencement of remedial activities. In general, the data indicate minor/seasonal changes in concentration for the monitored parameters at each of the sample locations with no upward trending. These data support the assumption set forth in the ROD that the groundwater contamination is localized and the decrease in frequency indicates that limited residual groundwater contamination has attenuated. The environmental easement placed on the Site property restricts the use of groundwater as a source of potable or process water unless groundwater quality standards are met. Groundwater quality will continue to be monitored in accordance with the SMP.

Surface water samples were collected from three locations along the Creek at the same time as the groundwater samples were obtained from June 2011 through October 2018. Samples were also analyzed for inorganic parameters (total metals), VOCs (chlorinated aliphatics only) and water quality parameters (ammonia, hardness, chloride, total sulfide). Total metals analyses include hexavalent chromium, total chromium, arsenic, and manganese.

VOCs, sulfide, and chloride were not detected during any surface water sampling event. Ammonia was detected above the Surface Water Quality Standards (SWQS) of 0.035 mg/L and iron and manganese were detected above the SWQS of 0.30 mg/L. Although ammonia, iron and manganese concentrations were reported above standards, this appears attributable to naturally occurring conditions as evidenced by their presence of concentrations above the standards in the upstream surface water sample. In addition, iron does not have a primary standard, and is not considered a contaminant of concern for the Site.

The surface water data review indicates few exceedances of the standards with no observed impact from the Site to the Creek. This indicates that there is no contaminated groundwater plume emanating from the landfill area. Surface water quality will continue to be monitored in accordance with the SMP.

Operation and Maintenance

A long-term monitoring program in being implemented that was designed to ensure that the implemented remedy remains effective. The majority of the long-term monitoring program, which is being conducted by Benchmark under contract to the PSDs, includes the following: Annual inspection of the landfill cover system; monitoring of the gas venting system; inspection of groundwater level monitoring; collection of groundwater samples from selected wells; collection of surface water samples from the Creek at three locations and groundwater samples from five wells; and providing annual reports on these activities to NYSDEC and EPA. The Groundwater/Seep Collection and Pretreatment systems are monitored semi-annually by the Village of Gowanda, on behalf of GARC.

Five-Year Review

Because hazardous substances, pollutants, or contaminants remain at the Site above levels that would otherwise allow for unlimited use and unrestricted exposure, a statutory five-

year review is required. The first five-year review was completed in April 2015. In the review EPA concluded that the remedy is functioning as intended and is protective of human health and the environment. The five-year review did not include any issues or recommendations. The next five-year review will be completed before April 2020.

Community Involvement

Public participation activities for this Site have been satisfied as required in CERCLA 113(k) and Section 117. As part of the remedy selection process, the public was invited to comment on EPA's proposed remedies. All other documents and information that EPA relied on or considered in recommending this deletion are available for the public to review at the information repositories identified above.

Determination That the Site Meets the Criteria for Deletion in the NCP

EPA, with the concurrence of the State of New York through NYSDEC, has determined that all required and appropriate response actions have been implemented by the responsible parties. The criteria for deletion from the NPL (40 CFR 300.425(e)(1)(I)) are met. The implemented remedy achieves the protection specified in the ROD(s) for all pathways of exposure. All selected remedial and removal action objectives and associated cleanup levels are consistent with agency policy and guidance. No further Superfund response is needed to protect human health and the environment.

V. Deletion Action

The EPA, with concurrence of the State of New York through the NYSDEC, has determined that all appropriate response actions under CERCLA, other than operation and maintenance, monitoring and five-year reviews have been completed. Therefore, EPA is deleting the Site from the NPL.

Because EPA considers this action to be noncontroversial and routine, EPA is proposing to delete the Site without prior publication. This action will be effective September 30, 2019, unless EPA receives adverse comments by August 29, 2019. If adverse comments are received within the 30-day public comment period, EPA will publish a timely withdrawal of this direct final notice of deletion before the effective date of the deletion, and the deletion will not take effect. EPA will prepare a response to comments and continue with the deletion process, as appropriate, on the basis of the notice of intent to delete and the comments already received. If there is no withdrawal of this direct final notice of deletion, there will be no additional opportunity to comment.

List of Subjects in 40 CFR Part 300

Environmental protection, Air pollution control, Chemicals, Hazardous substances, Hazardous waste, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Dated: July 16, 2019.

Peter D. Lopez,

Regional Administrator, Region 2.

For the reasons set out in this document, 40 CFR part 300 is amended as follows:

PART 300—NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN

■ 1. The authority citation for part 300 continues to read as follows:

Authority: 33 U.S.C. 1321(d); 42 U.S.C. 9601–9657; E.O. 13626, 77 FR 56749, 3 CFR, 2013 Comp., p. 306; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp., p. 193.

Subpart L—National Oil and Hazardous Substances Pollution Contingency Plan; Involuntary Acquisition of Property by the Government

Appendix B to Part 300 [Amended]

■ 2. Table 1 of Appendix B to part 300 is amended by removing the entry: ''NY, Peter Cooper, Gowanda''.

[FR Doc. 2019–16065 Filed 7–29–19; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 721

[EPA–HQ–OPPT–2011–0941; FRL–9995–09]

RIN 2070–AB27

Modification of Significant New Uses for Oxazolidine, 3,3′-Methylenebis[5-methyl-,

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is amending a significant new use rule (SNUR) under section 5(a)(2) of the Toxic Substances Control Act (TSCA) for oxazolidine, 3,3′-methylenebis[5-methyl-, which was the subject of premanufacture notice (PMN) P–03–325 and significant new use notice (SNUN) S–17–4. The chemical substance is also subject to an Order issued by EPA pursuant to TSCA section 5(e). This action amends the SNUR to the uses allowable without further SNUN reporting requirement to include use as an anti-corrosive agent in oilfield operations and hydraulic fluids and makes the lack of certain worker protections a significant new use. The SNUR requires persons who intend to manufacture (defined by statute to include import) or process this chemical substance for an activity that is designated as a significant new use by this rule to notify EPA at least 90 days before commencing that activity. The required notification initiates EPA's evaluation of the use, under the conditions of use for the chemical substance, within the applicable review period. Persons may not commence manufacture or processing for the significant new use until EPA has conducted a review of the notice, made an appropriate determination on the notice, and has taken such actions as are required with that determination.

DATES: This final rule is effective September 30, 2019.

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA–HQ–OPPT–2011–0941, is available at *http://www.regulations.gov* or at the Office of Pollution Prevention and Toxics Docket (OPPT Docket), Environmental Protection Agency Docket Center (EPA/DC), EPA West Bldg., Rm. 3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the OPPT Docket is (202) 566–0280. Please review the visitor instructions and additional information about the docket available at *http://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: *For technical information contact:*

Kenneth Moss, Chemical Control Division (7405M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; telephone number: (202) 564–9232; email address: *moss.kenneth@epa.gov.*

For general information contact: The TSCA-Hotline, ABVI-Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554–1404; email address: *TSCA-Hotline@epa.gov.*

SUPPLEMENTARY INFORMATION:

APPENDIX H

Site Redevelopment – Excerpts from 2016-2017 Annual Summary Report

3.0 PARK REDEVELOPMENT

In the years following completion of remedial construction GARC performed several significant steps toward redevelopment of the Site, including:

- Clearing and re-grading the portion of the Site outside of the Elevated Fill Area in preparation for park construction.

- Import of several thousand cubic yards of clean fill for use as cover soil. At this time all areas of the site designated for passive recreational use have been covered with a minimum of one foot of clean, vegetated cover soil or pavement and those designated for active recreational use have been covered with a minimum of two feet of clean, vegetated cover soil or pavement. Cover material import testing was performed and provided to the USEPA and NYSDEC for review prior to use. Inspections were performed by GARCs designated engineer to verify the minimum required soil thicknesses were achieved.

- Construction of a Creek access point at the eastern end of the property

- Construction of an asphalt pathway along the creek bank.

Several additional park amenities were completed during the subject 2016-2017 reporting period as further discussed below. All improvements made to date have been funded by GARC through the initial redevelopment funds discussed in Section 1.0 as well as donations, grants and volunteer hours from local community stakeholders and business owners.

3.1 2016 and 2017 Improvements

Park amenities and improvements constructed during the 2016 and 2017 calendar years are listed below:

- Regulation (90 foot) Ballfield: 2016
- Playground and Equipment: 2016
- Paved Parking Area and Extension of Asphalt Path: 2016 (paid in 2017)
- Ballfield Backstop: 2017
- 24’ x 24’ Gazebo: 2017

Expenses incurred in 2017 and funding sources are presented below:

1.	24' x 24 'Gazebo	$13,000
2.	1,155 tons of Blacktop pathways and parking lots	$107,000
3.	Baseball Backstop installed	$10,100
		Total cost $ 130,100

Income and Donations

1.	Gazebo donation	$2,000
2.	EPF grant	$154,000
3.	D&H Excavation donation	$8,000
4.	Catt. County baseball grant	$7,500
5.	Tim McKeever gazebo donation	$3,000
	Donations and grant reimbursements	$174,500

3.2 Planned Future Improvements

Planned improvements for the upcoming 2018 reporting period include:

- Rubbelize 800' of existing retaining wall and restoration on naturalistic creek bank with stack rock and creek side fencing.
- Construction of 150' creek overlook with seating, creek access.
- Construction of basketball court and expanded play structure

The above improvements have an estimated total cost of approximately $1.2 M and will be funded with NY State Empire State Development grant monies. In addition, the improvements listed below are proposed for future years. Many of these improvements are contingent upon funding that can only be secured if EPA successfully delists the site from the NPL, as several of the major funding sources available for public improvement projects of this nature preclude investment in active NPL sites.

- Completion of grading plan and softball/ little league field.

- Repair 300' of existing retaining wall and installation of creek side fencing.
- Rubbelize 300' of retaining wall, install stack rock and creek side fencing to restored naturalistic creek bank.
- Construct 300' of new retaining wall and creekside fencing construction with scenic overlook.
- Construction of 100' scenic overlook and enhanced creek access.
- Construct 500' of retaining wall repair and install of stack rock at scenic overlook and creek side fencing at northwest end of Gateway Park.
- Finish paving pathways and parking lots.
- Construction of precast concrete concession stand, restrooms and site information kiosk.
- Construction of plaza with ice skating rink.
- Install cable fence at Parking lots.

Budgets for these tasks as well as an overall Site Redevelopment Master Plan are presented in Appendix D