Sterling Environmental Engineering, P.C.

PERIODIC REVIEW REPORT
(August 1, 2019 – October 31, 2020)

TOWN OF RAMAPO LANDFILL SITE
250 TORNE VALLEY ROAD
HILLBURN, ROCKLAND COUNTY, NEW YORK

NYSDEC SITE NUMBER #344004; USEPA CERCLIS ID NYD000511493

Prepared for:

Town of Ramapo
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Suffern, New York 10901

and

Town of Ramapo Department of Public Works
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November 19, 2020

"Serving our clients and the environment since 1993"

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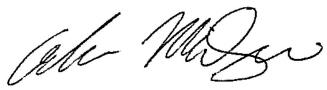
CERTIFICATION

I, Andrew M. Millspaugh, P.E., certify that I am a New York State registered professional engineer and that this Periodic Review Report (PRR) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in accordance with the DER-approved work plan and any DER-approved modifications.



11/19/2020

Andrew M. Millspaugh, P.E. Date

EXECUTIVE SUMMARY

The Town of Ramapo Landfill (Landfill), located at 250 Torne Valley Road in the Village of Hillburn, Town of Ramapo, Rockland County, New York (refer to Figure 1), is a Superfund National Priorities List (NPL) site and is regulated by the United States Environmental Protection Agency (USEPA), CERCLIS ID NYD000511493. The Landfill property is also registered as a New York State Class 4 Inactive Hazardous Waste Disposal Site, Registry No. 344004.

The Landfill was placed on the NPL in September 1983. The USEPA issued a Record of Decision (ROD) dated March 31, 1992, which was modified in December 1997 by Explanation of Significant Difference (ESD).

Between 1980 and 1988, the NYSDEC and the Town of Ramapo entered into four (4) Orders on Consent phasing out Landfill operations, constructing a surface water and groundwater diversion system and a leachate collection and transport system, and conducting a Remedial Investigation and Feasibility Study (RI/FS). The leachate collection system was constructed along the downgradient edge of the Landfill from 1984 to 1985. Leachate has been discharged to the Rockland County Sewer District (RCSD) No. 1 Western Ramapo Treatment Plant since 1996.

The selected remedies for the Landfill include Institutional Controls (IC) through a Declaration of Covenants and Restrictions that restricts disturbance of the Landfill cover and places restrictions on site use and offsite groundwater use restrictions, and onsite Engineering Controls (EC) provided by the Landfill cover and leachate collection systems, groundwater containment, fencing and access controls, air and water quality monitoring, and regular inspections and maintenance activities. The Covenant of Restrictions and Environmental Easements were filed with the Rockland County Clerk on August 28, 2012 and October 10, 2012. Post-closure air and water quality monitoring, leachate removal, and inspections and maintenance at the Landfill have been provided by the Town of Ramapo since 1999. A Site Management Plan (SMP) incorporates the Institutional/Engineering Control (IC/EC) Plan, the Inspection and Monitoring Plan, and the Operation and Maintenance Plan to provide for the continual post-closure monitoring and maintenance of the Landfill.

An annual Periodic Review Report (PRR) is required to document site management activities outlined in the SMP. This PRR covers the period August 1, 2019 to October 31, 2020.

The remedial program implemented at the Landfill has been successful in meeting the remedial objectives set forth in the RODs. Leachate generation and contaminant migration through groundwater has reduced. The Landfill cover prevents contamination of surface runoff and direct human/animal contact with waste, and Landfill gas migration/buildup is effectively controlled.

Based on the results of activities performed from August 2019 through October 2020, no changes to the approved SMP are recommended. The requirements for discontinuing site management have not been met. As such, continued compliance with the approved SMP is recommended.

1.0 INTRODUCTION

The Town of Ramapo Landfill (Landfill), located at 250 Torne Valley Road in the Village of Hillburn, Town of Ramapo, Rockland County, New York (refer to Figure 1), is a Superfund National Priorities List (NPL) site and is regulated by the United States Environmental Protection Agency (USEPA), CERCLIS ID NYD000511493. The Landfill property is also registered as a New York State Class 4 Inactive Hazardous Waste Disposal Site, Registry No. 344004.

The Landfill was placed on the NPL in September 1983. The USEPA issued a Record of Decision (ROD) dated March 31, 1992, which was modified in December 1997 by Explanation of Significant Difference (ESD).

The Landfill encompasses 86.07 acres owned by the Town of Ramapo and is located east of Torne Valley Road and immediately west/southwest of Baler Boulevard (refer to Figure 2). The Baler Building, which is actively accepting waste, is located on Baler Boulevard and is adjacent to the Landfill to the northeast. The highest elevation is located on the eastern most edge of the site, and the Landfill slopes downward in a westerly direction towards Torne Brook. The lowest elevation is located along the southwestern edge of the site. Stone and concrete drainage ditches are present along the perimeter of the Landfill. Several stone drainage channels and swales are connected to four (4) main stone drainage downchutes that drain into the western perimeter drainage ditch of the Landfill. The site is covered with suitable shallow rooted vegetation with no evidence of erosion. Some deeper rooted vegetation is present in select drainage structures across the Landfill. The Landfill is surrounded by perimeter fencing and can only be accessed through an access gate at the northeast edge of the Landfill adjacent to Baler Boulevard.

The Landfill stages compost windrows on the east edge of the property and contains a shooting range for the Town of Ramapo Police Department. The Landfill is mowed regularly to prevent deep rooted vegetation that may damage the cover; however, portions of the Landfill are not mowed due to the presence of Timber Rattlesnake habitats.

An annual Periodic Review Report (PRR) is required to document site management activities outlined in the Site Management Plan (SMP). This PRR covers the period August 1, 2019 to October 31, 2020 and includes the 2020 Post-Closure Monitoring (PCM) event conducted on October 5 to October 8, 2020. A Landfill inspection, air monitoring, leachate monitoring, groundwater monitoring, and an evaluation of institutional controls (IC) and engineering controls (EC) was completed in support of the 2020 PCM event.

1.1 Summary of Site History

The Landfill is located at the western base of the Ramapo Mountains on Torne Valley Road and consists of two major lobes commonly known as the north and south lobes. Landfill slopes range from three (3) to thirty-three (33) percent. Property features are presented in Figure 2.

Prior to landfilling operations in the 1950s and 1960s, portions of the property were excavated for gravel. In 1971, the Town was permitted by the Rockland County Department of Health (RCDOH) to operate a sanitary landfill. Under various operators, municipal solid waste (MSW) was accepted until 1984, and construction and demolition (C&D) debris was accepted until 1989. Substances reportedly disposed at the Landfill include industrial and sewer sludge, municipal refuse, asbestos, C&D debris, yard debris, paint sludge (presumably from an automotive plant), and liquid waste (reportedly from a paper company).

The Landfill was placed on the NPL in September 1983. Between 1980 and 1988, the NYSDEC and the

Town of Ramapo entered into four (4) Orders on Consent phasing out Landfill operations, constructing a surface water and groundwater diversion system and a leachate collection and transport system, and conducting a Remedial Investigation and Feasibility Study (RI/FS). The leachate collection system was constructed along the downgradient edge of the Landfill from 1984 to 1985. Initially, collected leachate was conveyed by pumps and lift stations to a wastewater treatment pond in the southwest corner of the Landfill property. After aeration and settling, treated water was discharged to the Ramapo River. Since 1996, leachate has been discharged to the Rockland County Sewer District (RCSD) No. 1 Western Ramapo Treatment Plant.

In 1998, the Town of Ramapo subdivided the sections of the Landfill property used for the transfer facility, scale house, and leachate storage tank. The transfer facility and scale house properties were sold to the Rockland County Solid Waste Management Authority (RCSWMA) and the leachate storage tank property was sold to the RCSD.

The selected remedies for the Landfill include Institutional Controls (IC) through a Declaration of Covenants and Restrictions that restricts disturbance of the Landfill cover and places restrictions on site use and offsite groundwater use restrictions, and onsite Engineering Controls (EC) provided by the Landfill cover and leachate collection systems, groundwater containment, fencing and access controls, air and water quality monitoring, and regular inspections and maintenance activities. The Covenant of Restrictions and Environmental Easements were filed with the Rockland County Clerk on August 28, 2012 and October 10, 2012. Post-closure water and air quality monitoring, leachate removal, and inspections and maintenance at the Landfill have been provided by the Town of Ramapo since 1999. An existing SMP incorporates the Institutional/Engineering Control (IC/EC) Plan, the Inspection and Monitoring Plan, and the Operation and Maintenance Plan to provide for the continual post-closure monitoring and maintenance of the Landfill.

1.2 Effectiveness of the Remedial Program and Compliance

The remedial program implemented at the Landfill has been successful in meeting the remedial objectives set forth in the RODs. Leachate generation and contaminant migration through groundwater has reduced. The Landfill cover prevents contamination of surface runoff, prevents direct human/animal contact with waste, and effectively controls Landfill gas migration/buildup.

1.3 Recommendations

Based on the results of activities performed from August 1, 2019 to October 31, 2020, no changes to the approved SMP are recommended. The requirements for discontinuing site management have not been met.

2.0 OVERVIEW

The following information was collected in support of the Landfill PCM:

- The Annual PCM Landfill inspection was performed by Sterling Environmental Engineering, P.C. (STERLING) on October 7, 2020. Site Location and Property Features Maps are provided as Figures 1 and 2. The 2020 Landfill inspection documents the physical integrity and stability of the Landfill cover system and assesses the condition and capability of existing surface water drainage and erosion control features. An Inspection Checklist and Institutional and Engineering Control Evaluation Form are provided in Appendix A. The NYSDEC Institutional and Engineering Controls Certification Form is provided in Appendix B. A photograph log documenting observations during the Annual Landfill inspection is provided in Appendix C.

- The 2020 air quality monitoring event was conducted October 5 to October 7, 2020. Air monitoring locations are shown on Figure 3 and results are summarized on Table 1.

- Groundwater samples were collected from monitoring wells 1-OS, 2-OS, 3-OS/I, 4-OS, 7-OS, 8-OS, 8-I, 8-R, 9-OS, 9-I, 9-R, 10-OS, 10-I, 10-R, UP-OS, UP-I, UP-R, private water supply wells PW-1 and PW-2, and public water supply wells SVWC-93, SVWC-94, SVWC-95, and SVWC-96. Well locations are shown on Figure 3. The groundwater samples were analyzed for parameters listed in Table 2. A summary of field parameter measurements and analytical results for each well is summarized in Tables 3, 4, and 5. Analytical laboratory reports are provided in Appendix D. In addition, static water level readings were obtained at all of the sampled monitoring wells and monitoring wells 1-I, 1-R, 2I, 2-R, 3-R, 4-I, 4-R, 5-OS, 5-I, 5-R, 6-I, 6-R, 7-I, and 7-R.

- In accordance with the NYSDEC letter dated June 12, 2019 requesting that select groundwater samples be analyzed for additional emerging contaminants (per- and polyfluoroalkyl substances (PFAS) & 1,4-Dioxane), additional samples were collected from the upgradient monitoring well cluster (UP-OS, UP-I, and UP-R), the two (2) most downgradient sentinel well clusters (9-OS, 9-I, 9-R and 10-OS, 10-I, and 10-R), and two (2) of the public water supply wells (SVWC-94 and SVWC-95). The subject groundwater samples were collected at the same time as the PCM groundwater monitoring event.

- Historical data for select parameters (aluminum, beryllium, cadmium, copper, antimony, arsenic, chromium, iron, lead, magnesium, manganese, nickel, sodium, and thallium) requested by the NYSDEC and USEPA are provided in Tables 6 through 19.

- Reported discharge volumes pumped from the groundwater/leachate extraction wells, located on the downgradient side of the Landfill, to the RCSD No. 1 Western Ramapo Treatment Plant were provided by the Town of Ramapo and is included in Table 20.

- Analytical results from 2009 through the 2020 sampling event for leachate/groundwater pumped to the Western Ramapo Treatment Plant are summarized in Table 21, and analytical reports are provided in Appendix E.

3.0 PERFORMANCE, EFFECTIVENESS, AND PROTECTIVENESS

The Landfill has been subject to a SMP since March 1999. The SMP provides for regular site inspections, air, groundwater, and leachate monitoring, leachate collection and management, mowing, and Landfill gas management.

3.1 Air Quality

Air quality monitoring consisted of measuring concentrations of explosive gas (measured in percent of lower explosive limit (%LEL)), hydrogen sulfide (H_2S), and volatile organic compounds (VOC) in the headspace of each monitoring well, leachate manhole A-5, lift stations A-10 and W-20, and within the ambient breathing zone inside the Baler Building and along the Landfill perimeter at designated locations shown on Figure 3. Air quality monitoring results are summarized in Table 1. Explosive gas and H_2S measurements were obtained with a QRAE multi-gas monitor, and VOC measurements were obtained with a miniRAE 3000 photoionization detector (PID). The presence of VOCs, H_2S, and explosive gas were not detected in the breathing zone inside the Baler Building or along the Landfill perimeter sampling locations

(Table 1). The presence of explosive gas was detected within manhole A5 (16% LEL) and Lift Station A-10 (21% LEL). The air quality monitoring survey for explosive gas, H_2S, and VOCs indicated the Landfill is in compliance with the requirements set forth in 6 NYCRR 360-2.15(k)(4) and 2.17(f) (effective prior to November 4, 2017).

3.2 Groundwater Monitoring

3.2.1 Groundwater Flow

Depth to water measurements were obtained at or near the Landfill perimeter to determine groundwater elevations in the shallow overburden and bedrock aquifer systems. Groundwater flow direction in the overburden aquifer is to the northwest and/or west towards Torne Brook (Figure 5). Groundwater flow direction in the bedrock aquifer is similar (Figure 6). The bedrock groundwater elevation data for monitoring well 6-R was not utilized as the measured elevation was not consistent with historical data. A well integrity assessment, including re-surveying the measuring point, will be completed in 2021. Groundwater gradients are similar in both aquifer systems and downward vertical gradients are noted throughout the Landfill perimeter, except at monitoring well clusters UP, 7-OS/7-I, 8, 9, and 10, which were observed to be slight (7-OS/7-I and 8) to moderately (UP, 9, and 10) upward. These vertical gradients are consistent with historical trends.

3.2.2 Groundwater Analytical Results

All samples were analyzed by Alpha Analytical, located in Westborough, Massachusetts, following established methodologies and protocols. A copy of the analytical reports, prepared in accordance with NYSDEC Analytical Services Protocol (ASP) Category A reporting requirements, are provided in Appendix D.

Static water level and water quality field parameters (temperature, specific conductivity, pH, and oxidation-reduction potential (ORP)) were measured in the field and are presented on Table 3. The summary of the 2020 PCM groundwater analytical results are provided on Tables 4 and 5. A duplicate sample was collected from bedrock monitoring well 9-R and is labeled as “DUP10052020”.

Analytical results for monitoring well samples are compared to the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1), Ambient Water Quality Standards and Guidance Values (June 2004). No site-related VOCs were detected at any of the shallow overburden monitoring wells (UP-OS, 1-OS, 2-OS, 3-OS/I, 4-OS, 7-OS, 8-OS, 9-OS, and 10-OS), intermediate overburden monitoring wells (UP-I, 3-OS/I, 8-I, 9-I, and 10-I) or bedrock monitoring wells (UP-R, 8-R, 9-R, and 10-R). Analytical results for the drinking water supply well samples indicate that there are no reported USEPA MCL and NYSDOH Part 5 exceedances at the public water supply wells or private drinking water supply wells.

TOGS 1.1.1 exceedances were observed at six (6) shallow overburden monitoring wells (1-OS, 2-OS, 3-OS/I, 4-OS, 7-OS, and 8-OS), three (3) intermediate overburden monitoring wells (3-OS/I, 8-I, and 9-I), and two (2) downgradient bedrock monitoring wells (8-R and 9-R). A detailed summary of reported parameter exceedances is provided below.

Reported concentrations for the following parameters exceed the applicable water quality standard:

Parameter Exceeding Water Quality Standard (TOGS 1.1.1)	NYS Groundwater Standard	1-OS	2-OS	3-OS/I	4-OS	7-OS	8-OS	8-I	8-R	9-I	9-R
Antimony	0.003						0.00354J				
Chromium	0.05	0.318	0.094	3.19	0.106	0.573	0.06122		0.05239		
Iron	0.3**	9.66	1.05	13.6	1.18	5.31	0.552	9.63	1.56	0.305	0.533
Magnesium	35								66.8		
Manganese	0.3**	13	0.026	1.5	0.463	0.586	0.1835	3.479	0.5774		1.137
Nickel	0.1			0.711							
Selenium	0.01	0.013									
Sodium	20	112	24.8	60.8	51.8		26.3	91.4	71.5	26.1	50
Thallium	0.0005	0.015J		0.005J		0.004J					

** = The standard for the sum of iron and manganese is 0.5 mg/L.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximate.

3.2.3 Concentration vs. Time Trends

Historical data summary tables are provided in Tables 6 through 19 for select inorganic parameters (aluminum, antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, magnesium, manganese, nickel, sodium, and thallium) that have exceeded water quality standards or guidance values. Concentration versus time plots are also provided in Tables 6 through 19 to enable data trend analysis. The concentration trends over time for parameters with TOGS exceedances reported for this event are presented in plots shown in Tables 10, 12, 13, 15, 16, 17, and 18 and are summarized below:

Antimony (Table 10)

The following monitoring wells exceeded the TOGS 1.1.1 standard for antimony (3 µg/L or 0.003 mg/L): 8-OS, which is the first exceedance for antimony at this monitoring location.

Chromium (Table 12)

The following monitoring wells exceeded the TOGS 1.1.1 standard for chromium (50 µg/L or 0.05 mg/L): 1-OS, 2-OS, 3-OS/I, 4-OS, 7-OS, 8-OS, and 8-R.

Monitoring wells 1-OS, 2-OS, 3-OS/I, 4-OS, 7-OS, and 8-OS show data trendlines that are generally consistent with a slight apparent increasing trend, while the trendline for monitoring well 2-OS shows a slight apparent decreasing trend. This is the first exceedance for chromium at monitoring well 8-R.

Iron (Table 13)

The following monitoring wells exceeded the TOGS 1.1.1 standard for iron (300 µg/L or 0.3 mg/L): 1-OS, 2-OS , 3-OS/I, 4-OS, 7-OS , 8-OS, 8-I, 8-R, 9-I, and 9-R.

Monitoring wells 3-OS/I and 9-R show as being stable over time. The data trendlines for these two (2) monitoring points were removed from their respective iron concentration trend over time graph due to the poor fit of the correlation coefficient with each respective trendline. The following monitoring wells show a decreasing trend over time: 1-OS, 2-OS, 4-OS, 7-OS, 8-OS, 8-I, 8-R, and 9-I.

Magnesium (Table 15)

Monitoring well 8-R exceeded the TOGS 1.1.1 standard for magnesium (35,000 µg/L or 35 mg/L). The magnesium concentration in well 8-R is slightly increasing over time.

Manganese (Table 16)

The following monitoring wells exceeded the TOGS 1.1.1 standard for manganese (300 µg/L or 0.3 mg/L): 1-OS, 3-OS/I, 4-OS, 7-OS, 8-I, 8-R, and 9-R. Monitoring wells 3-OS/I, 4-OS, 7-OS, and 8-R show a decreasing trend over time while manganese in groundwater at monitoring wells 1-OS and 8-I are apparently increasing over time although a poor fit was observed. Historical manganese results at 9-R also exhibits a recent decreasing trend over time although a poor fit was observed.

Nickel (Table 17)

The following monitoring wells exceeded the TOGS 1.1.1 standard for nickel (100 µg/L or 0.1 mg/L): 3-OS/I, which shows a slightly increasing trend over the last five (5) years although a poor fit was observed. The data trendline was removed from its nickel concentration trend over time graph due to the poor fit of the correlation coefficient.

Sodium (Table 18)

The following monitoring wells exceeded the TOGS 1.1.1 standard for sodium (20,000 µg/L or 20 mg/L): 1-OS, 2-OS, 3-OS/I, 4-OS, 8-OS, 8-I, 8-R, 9-I, and 9-R. The following monitoring wells show an increasing trend over time: 1-OS, 3-OS/I, 4-OS, 8-OS, 8-I, and 9-R. Monitoring well 8-R shows a decreasing trend over time for sodium.

There are no NYSDOH drinking water quality standard or designated limits for sodium. Water containing more than 20 mg/L of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets. The onsite and offsite monitoring wells are not used as a drinking water supply source.

Sodium is included on the USEPA's Drinking Water Contaminant Candidate List (CCL). The CCL is a list of contaminants which, at the time of publication, are not subject to any proposed or promulgated National Primary Drinking Water Regulation (NPDWR), are known or anticipated to occur in public water systems, and may require regulations under the Safe Drinking Water Act (SDWA).

Thallium (Table 19)

The following monitoring wells exceeded the TOGS 1.1.1 standard for thallium (0.5 µg/L or 0.0005 mg/L): 1-OS, 3-OS/I, and 7-OS. Monitoring wells 1-OS, 3-OS/I, and 7-OS all show a decreasing trend over time for thallium. This is the third exceedance for thallium at monitoring wells 1-OS and 3-OS/I. This is the second exceedance for thallium at monitoring well 7-OS.

3.2.4 Offsite Private Drinking Water Supplies / Offsite Public Water Supplies

Groundwater from PW-1 and PW-2 is used as a private drinking water supply, and groundwater from SVWC-93, SVWC-94, SVWC-95, and SVWC-96 are used as a public water supply. Analytical results for these private and municipal drinking water supply wells are compared to the NYSDOH 10 NYCRR Part 5 MCLs and the USEPA MCLs for Primary Drinking Water Regulations. No exceedances of NYSDOH or USEPA MCLs were noted at the private water supply wells or public water supply wells (refer to Table 5 and Appendix D).

The sodium results at the private water supply wells are below the Applicable or Relevant and Appropriate Requirements (ARAR) standard of 20 mg/L while sodium results for the public water supply wells SVWC-93, SVWC-94, SVWC-95, and SVWC-96 exceed 20 mg/L. The public water supply wells have historically exceeded the ARAR for sodium and are increasing over time.

3.2.5 Emerging Contaminants (1,4-Dioxane and Perfluorinated Compounds) in Select Onsite and Offsite Groundwater Samples

1,4-Dioxane

Groundwater samples were collected for 1,4-Dioxane analysis from nine (9) monitoring wells UP-OS, UP-I, UP-R, 9-OS, 9-I, 9-R, 10-OS, 10-I, and 10-R and two (2) public water supply wells (SVWC-94 and SVWC-95). The NYSDEC emerging contaminant screening level for 1,4-Dioxane in groundwater is 35 µg/L. On August 26, 2020, NYS adopted new drinking water standards for Public Water Supplies that set maximum contaminant levels (MCLs) of 1 part per billion (1 ppb or 1 µg/L) for 1,4-dioxane. 1,4-Dioxane was not detected above the laboratory method detection limit (MDL) in groundwater samples collected from monitoring wells UP-OS, UP-I, UP-R, 9-OS, 9-I, 10-OS, 10-I, 10-R, and public water supply well SVWC-94 (Tables 4 and 5). 1,4-Dioxane was detected at 2.69 µg/L and 0.412 µg/L in groundwater sampled from monitoring well 9-R and public water supply well SVWC-95, respectively (Tables 4 and 5).

Per and Polyfluoroalkyl Substances (PFAS)

Groundwater samples were collected for PFAS compound analysis from nine (9) monitoring wells UP-OS, UP-I, UP-R, 9-OS, 9-I, 9-R, 10-OS, 10-I, and 10-R and two (2) public water supply wells (SVWC-94 and SVWC-95). The NYSDEC screening level is 100 nanograms per liter (ng/L) for PFOA and PFOS, 100 ng/L for any other individual PFAS compound, and 500 ng/L for the total concentration for all PFAS compounds. On August 26, 2020, NYS adopted new drinking water standards for Public Water Supplies that set a MCL of 10 parts per trillion (10 ppt or 10 nanograms per liter ng/L) each for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). The groundwater sampled from onsite and offsite monitoring wells, as part of the annual groundwater monitoring program, is not used as a drinking water supply source. Results for PFAS compounds in groundwater are provided in Tables 4 and 5. PFAS compounds were not detected at levels exceeding any of the NYSDEC screening levels in any groundwater sample analyzed. The NYSDOH MCL for PFOA in drinking water and PFOS in drinking water were not exceeded at public water supply wells SVWC-94 and SVWC-95.

3.3 Leachate Quality

The September 18, 2019 and February 19, 2020 analytical results for leachate/groundwater are summarized in Table 21 and are generally consistent with previous results. Leachate water quality is characterized by detectable to elevated concentrations of leachate indicators such as ammonia, COD, chloride, hardness, nitrate, sulfate, TDS, and TKN and inorganic parameters, including boron, cadmium, copper, manganese,

and zinc. Inorganic parameters that were not detected include antimony, arsenic, beryllium, chromium, lead, mercury, molybdenum, nickel, selenium, silver, and thallium.

4.0 INSTITUTIONAL/ENGINEERING CONTROL PLAN COMPLIANCE

The multiple institutional and engineering controls for the Landfill implemented by the RODs and documented in the SMP continue to be in place and performing as designed. These controls were reviewed and evaluated through this PRR.

4.1 Institutional Controls

Institutional Controls (IC) include restrictions on the use of real property that limits human and environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of the remedial program or with the effectiveness and/or integrity of operation, maintenance, or monitoring activities at or pertaining to the Landfill property.

ICs may include, but are not limited to environmental easements, deed restrictions, discharge permits, site security (other than fencing), local permits, Orders on Consent/decrees, zoning restrictions, hazardous waste site registry, deed notice, groundwater use restrictions, condemnation of property, and public health advisories.

The Covenant of Restrictions and Environmental Easements were filed with the Rockland County Clerk on August 28, 2012 and October 10, 2012. The Environmental Easements stay with the property in perpetuity to provide an effective and enforceable means of encouraging the reuse and redevelopment of the property in a manner determined to be safe for a specific use, while ensuring the performance of operation, maintenance, and/or monitoring requirements, and to ensure the potential restriction of future uses of the land that are consistent with the ROD.

The following restrictions apply to the Landfill property (Parcel 39.19-1-3):

- There shall be no construction, use, or occupancy that results in a disturbance or excavation that threatens the integrity of the engineering controls (EC) described in Section 4.2, or which results in unacceptable human exposure to contaminated soils.

- The Owner shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of ECs described in Section 4.2 unless a written waiver is obtained from the USEPA and NYSDEC for each occasion.

- The Owner shall prohibit land use from ever being used for purposes other than commercial/industrial use without the express written waiver by the USEPA and NYSDEC.

- The Owner shall prohibit the use of underlying groundwater, without rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the USEPA and NYSDEC. This restriction also applies to Parcel 39.19-1-3.1, owned by RCSD No. 1, and Parcels 39.19-1-4 and 39.19-1-5, owned by RCSWMA.

- The Owner shall provide an annual certification (see Section 2.3 of the SMP) prepared by a Professional Engineer or environmental professional acceptable to the USEPA and NYSDEC. The

certification will document in-place ICs and ECs are unchanged from the previous certification, comply with the current SMP and have not been impaired.

- The Owner shall continue to implement and maintain the ICs and ECs identified in the SMP unless permission to discontinue such controls is granted from the USEPA and NYSDEC. This requirement also applies to Parcel 39.19-1-3.1, owned by RCSD No. 1, and Parcels 39.19-1-4 and 39.19-1-5, owned by RCSWMA.

- All ICs and ECs shall be binding for present and all future owners. Any conveyance of the Landfill property or portions of the Landfill property are subject to the ICs and ECs.

4.2 Engineering Controls

Engineering Controls (EC) may include physical barriers or methods to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination to ensure the long-term effectiveness of the remedial program, or eliminate potential exposure pathways to contamination.

The ECs for the Ramapo Landfill to control the source of contamination and the generation of contaminated leachate include:

- A Landfill cover consisting of layers of fill material, gas venting system, an impermeable membrane, and protective soil cover.

- Active groundwater extraction wells to supplement the existing leachate collection system.

- Leachate collection system for offsite treatment.

- Drainage swales to collect and divert surface water runoff downgradient of sections of the impermeable membrane installed on the Landfill slopes (Figure 4).

- Site security fencing to reduce trespassers on the Landfill property.

4.2.1 Landfill Cover System

Major components of the final cover system are a geomembrane barrier, secondary cushion geotextile, barrier protection soil layer, and a topsoil layer with vegetation.

The geomembrane barrier overlies the secondary cushion geotextile layer, which overlies the prepared existing subgrade, thereby covering the existing refuse mass and residual contaminated soil. The geomembrane barrier is overlain by another secondary cushion geotextile and a layer of 12 inches of low permeability barrier protection soil. The barrier protection soil layer is overlain by a 6-inch topsoil layer and seeded to minimize soil loss. The Landfill slopes are graded to provide proper drainage with slopes ranging from 3 to 33%.

Installation of the Landfill cover system minimizes infiltration of precipitation to wastes and the resultant generation of leachate and prevents the release of previously disposed wastes. The cover system is regularly inspected by the Town of Ramapo to evaluate its performance and assess the following physical condition elements: settlement and erosion of Landfill cover, vegetative growth, slope stability, damage due to presence of vector populations over or near Landfill cover (i.e., burrow holes), monitoring well and Landfill

gas vent integrity, presence or absence of leachate outbreaks, surface water drainage structures, site fencing, gates, and access roads, and evidence of trespassing.

A completed Inspection Checklist and Institutional and Engineering Control Evaluation Form from the annual site inspection completed on October 7, 2020 is provided in Appendix A. The Landfill cover was observed to be in good condition with no evidence of surface water ponding, leachate discharges, or iron-stained soils. The perimeter fence is currently intact and functioning as designed. The Landfill appears secure, stable, and the Landfill cover was observed to be well maintained and remains in good condition. No evidence of settlement, erosion, or damage due to active vector populations was observed and the overall physical integrity of the Landfill is in good condition.

The stormwater drainage system appeared to be functioning as designed. Overgrown vegetation is present in many of the drainage channels along the perimeter of the Landfill (see Photographs 1, 3, 7, 11, 13, 15, 21, and 23, Appendix C). The Landfill downchutes are in acceptable condition although some deeper rooted vegetation is present within select sections of the Landfill drainage structures, as identified on the Landfill Inspection Form (Appendix A), and should be maintained.

Two (2) damaged gas vents and two (2) angled gas vents (see Photographs 4, 5, 6, and 8; Appendix C) were observed across the Landfill. Overgrown vegetation was observed surrounding several gas vents. The subject gas vents should be repaired and overgrown vegetation should be removed as part of standard maintenance as described in the Site Management Plan (SMP). The concrete collar for the manhole cover at MH E-6 is damaged (Figure 7 and Photograph 2, Appendix C). Although the manhole was functioning as designed the concrete collar should be repaired. No additional actions or special maintenance is required for the Landfill cover system at this time beyond the regular ongoing post-closure care.

4.2.2 Leachate Collection System

All leachate collected from the leachate collection system flows by gravity to the adjacent RCSD No. 1 pump station and then the leachate/groundwater is pumped to the Western Ramapo Sewage Treatment Plant. The leachate collection/transfer system is designed and constructed to operate automatically. Extraction well and lift station locations are provided in Figure 7.

Individual pump controls are as follows:

1. Extraction Wells - Water Level Sensors

2. Lift Station and Pump Pit Pumps - Floats with mercury switches sensing actual water levels (Inactive).

4.2.3 Groundwater Extraction Wells

The groundwater extraction wells are pumped to contain the contaminant plume that migrates from the Landfill. The groundwater extraction wells are located on the western side of the Landfill along Torne Valley Road between monitoring well clusters MW-3 and MW-8. The layout of the extraction well system is approximately 700 feet in length. Three (3) extraction wells (W-5, W-6, and W-7) are approximately 20 feet deep and screened in dense sand and partially into the upper two (2) feet of bedrock. The remaining extraction wells (W-1 through W-4) are deeper, ranging from 38 to 51 feet in depth and are screened in dense sand and partially into upper ten feet of bedrock (see Figure 7 for locations).

The Town hired a consultant, Roberge Electric (Roberge), to install a flow meter on Extraction Well W-3 to serve as a prototype. Installation was completed at the end of May 2016. After evaluation, the flow meter performance was determined to be satisfactory and the Town contracted with Roberge to equip the remaining extraction wells with similar flow meters. Roberge completed installation of six (6) flow meters at lift station A-7 and W-20 and extraction wells W-1, W-2, W-4, and W-7 in mid-November 2016. Installation of flow meters at extraction wells W-5 and W-6 were installed in May 2017. The leachate collection system is located along the perimeter of the waste mass. The perimeter leachate collection system continues to function as designed.

The operation of extraction well W-1 was impacted due to faulty controller board and transducer between August 2019 and early June 2020. The new controller board and transducer at W-1 were acquired from a new manufacturer as the former units were deemed obsolete. Functionality for extraction wells W-1 through W-7 were briefly affected for a few days in late December 2019 due to a break in the power lines on Torne Valley Road. Extraction wells W-2 and W-3 experienced electrical problems between March 3, 2020 and April 2, 2020 as the minor electrical repairs were delayed due to retirement of key personnel and the lack of availability of other DPW staff due to Executive Orders being put-in-place regarding the COVID-19 pandemic.

Annual leachate/groundwater volumes pumped from the Landfill to the Western Ramapo Sewage Treatment Plant between 1995 and September 30, 2020 are summarized in Table 20. The total leachate/groundwater removed from the Landfill during this reporting period is 13,109,095 gallons: 8,342,290 gallons January 1, 2020 through October 31, 2020 and 4,766,805 gallons from August 1, 2019 through December 31, 2019. Removed leachate/groundwater was directed through a force main to the Western Ramapo Sewage Treatment Plant for treatment. For comparison, the total leachate/groundwater removed from the Landfill in 2019 was 14,079,593 gallons and the volume of leachate/groundwater pumped from the Landfill extraction wells between 2009 and 2019 has averaged 13,637,111 gallons per year. Four (4) of the last five (5) years have had annual volume removals above the most recent ten (10) year average while the 2019 extraction well discharge volume was 3.24% higher than the most recent ten (10) year average.

4.2.4 Surface Water Runoff Features and Drainage Swales

Surface water runoff features are located on and around the Landfill property (Figure 4). Terraces and riprap downchutes on the Landfill waste mass direct stormwater runoff to the Landfill perimeter drainage ditches successfully preventing the occurrence of standing water on the Landfill. The surface water runoff is directed into perimeter drainage ditches into drainage basins to reduce particulates and sediment before it ultimately enters into the Torne Brook. These surface water runoff features are checked routinely by the Town of Ramapo for sediment buildup, overgrowth of vegetation, overflow of drainage ditches or basins, improper drainage of terraces and downchutes, and sloughing of the Landfill cover. Based on the observed conditions during the Annual Landfill Site Inspection, no corrective measures are needed for the surface water management features.

Drainage swales collect diverted surface water runoff (Figure 4). Two (2) swales are located on the north lobe and two (2) swales are located on the south lobe of the Landfill. These swales divert runoff into wetlands, a retention pond, and Torne Brook.

4.2.5 Groundwater Monitoring Wells

Existing groundwater monitoring wells are located along the upgradient, crossgradient, and downgradient perimeter of the Landfill waste mass. The wells are used to monitor groundwater quality around the Landfill

property. Monitoring wells are routinely checked for sediment buildup using depth to bottom measurements and the integrity of the outer casing, lid, and lock. These monitoring wells are sampled every fifth quarter for 6 NYCRR Part 360 Baseline Parameters for indication of contamination by the Landfill waste mass.

Overall, the monitoring well network is functioning as designed and the Town of Ramapo will continue the approved annual monitoring program.

4.3 IC/EC Certification

As required by DER-10, Section 6.3(a), the completed and signed NYSDEC IE/EC Certification Form is provided as Appendix B. All ICs/ECs are in place and functioning as designed.

5.0 MONITORING PLAN COMPLIANCE

The Landfill was granted a post-closure monitoring variance by the NYSDEC on October 27, 2003, reducing the monitoring frequency to once every year with the monitoring event being rotated to the next quarter for each year. Monitoring includes collection of groundwater and leachate samples for analysis of 6 NYCRR Part 360 Baseline parameters, as well as water level measurements from select monitoring wells and air quality monitoring. Monitoring wells and sample locations are shown on Figure 3. The following sections describe the monitoring requirements for air, groundwater, and leachate quality.

5.1 Air Quality Monitoring

Air quality monitoring includes field measurements of explosive gas, H_2S, and VOC concentrations in the headspaces of each monitoring well, leachate manhole A-5, lift stations A-10 and W-20, and ambient breathing space at the Baler Building and along the Landfill perimeter at designated locations (Figure 3). Results of the air quality monitoring are described in Section 3.1.

The air quality monitoring program meets the remedial objectives to evaluate the effectiveness of the selected remedy by providing a direct means to determine if Landfill gases are prevented from migration and buildup. The Town of Ramapo will continue air quality monitoring according to the approved SMP.

5.2 Groundwater Monitoring

The current groundwater monitoring program consists of sampling eight (8) “OS” monitoring wells, one (1) OS/I monitoring well, three (3) downgradient “I” monitoring wells, three (3) downgradient “R” monitoring wells, two (2) private water supply wells, and four (4) public municipal water supply wells. A new monitoring well cluster (UP-OS, UP-I, and UP-R) was installed in 2016 to determine natural upgradient groundwater conditions. Static depth to water measurements are collected from locations shown on Figure 3 to determine groundwater flow patterns.

Overall, the groundwater monitoring program meets the remedial objectives by providing suitable means to determine the effectiveness of the selected remedy. The Town of Ramapo will continue groundwater monitoring according to the approved SMP.

5.3 Leachate Monitoring

Through June 2011, leachate and groundwater from the Landfill extraction well network were pumped to the Rockland County Sewer Treatment Plant located at 4 Route 340, Orangeburg, New York. Starting in

June 2011, leachate/groundwater collected by the Landfill extraction wells has been pumped to the RCSD No. 1 Western Ramapo Treatment Plant in Hillburn, New York. Analytical testing of the Landfill leachate/groundwater occurs on a biannual basis from a manhole located upstream of the discharge to the leachate wet well.

Analytical results from August 20, 2009 through February 19, 2020 are summarized in Table 21. Reported parameter concentrations are compared with Maximum Concentration Limits set by RCSD No. 1 Western Ramapo Treatment Plant. There are no limit exceedances for any of the listed parameters between August 20, 2009 and February 19, 2020.

Leachate/groundwater extracted from the Landfill and discharged to the RCSD No. 1 Western Ramapo Treatment Plant meets the industrial permit requirements for samples collected from August 20, 2009 through February 19, 2020. Sampling of the discharge from the Landfill will continue on a semi-annual basis.

6.0 OPERATION AND MAINTENANCE PLAN COMPLIANCE

The Operation and Maintenance (O&M) Plan for the Landfill, outlined in the SMP, consists of the following components:

- Repair, if necessary, of the Landfill cover system in accordance with approved specification materials and methods;
- Annual mowing of the vegetated cover system;
- Investigation of landfill cover system for evidence of sloughing, cracks, settlement, erosion and deposition, stressed vegetation, and undesirable vegetation;
- Vector control;
- Integrity assessment of the gas venting system;
- Investigation of gas odors;
- Snow plowing and upkeep of the perimeter access road;
- Collection, removal, and disposal of leachate;
- Preventative maintenance of leachate pumps;
- Repair or replacement, if necessary, of monitoring wells; and,
- Annual or more frequent clearing of drainage swales, ditches, and downchutes.

Between August 1, 2019 and October 31, 2020, the following O&M activities were performed:

- Routine and annual inspections of the Landfill cover system, surface water drainage features, monitoring wells, leachate collection system, and the Landfill property;
- Mowing of the Landfill cover system;
- Regular leachate removal from onsite extraction wells for treatment at RCSD No. 1;
- Integrity assessment of the monitoring network; and,
- Air, groundwater, and leachate quality monitoring.

Operation and maintenance of the property continues to protect human health and the overall integrity of the Landfill. There were no deficiencies in complying with the O&M Plan between the August 1, 2019 and October 31, 2020 reporting period. The components of the remedy subject to O&M requirements (Landfill cover, gas venting, leachate collection, and surface water management) are functioning as designed.

Regular inspections performed by Town of Ramapo personnel continue to show compliance with the remedy determined for the Landfill.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The Landfill continues to comply with the required activities set forth in the SMP for this reporting period. The ICs and ECs implemented at the site continue to function as designed. The environmental monitoring plan for the Landfill is ongoing and remains in accordance with the approved variance granted by the NYSDEC in 2003. The Town of Ramapo will continue to perform regular inspections to maintain the integrity of the Landfill and surrounding property to protect human health and the environment.

The following conclusions are made based on observations and analytical results collected during the reporting period of August 1, 2019 to October 31, 2020:

- The Landfill appears secure and stable, and the Landfill cover is intact with no evidence of stressed vegetation, leachate discharges, or damage due to settlement or active vectors.

- Two (2) damaged gas vents and two (2) angled gas vents were observed at the Landfill. Overgrown vegetation was also occasionally observed surrounding several gas vents. Vegetative growth is present along some sections of the Landfill's perimeter drainage structures and should be maintained.

- The concrete collar for the manhole cover at MH E-6 is damaged but is functioning as designed.

- The October 7, 2020 air quality monitoring survey for explosive gas, H_2S, and VOCs indicated the Landfill is in compliance with the requirements set forth in 6 NYCRR 360-2.15(k)(4) and 2.17(f) (effective prior to 11/4/17).

- The bedrock groundwater elevation obtained from monitoring well 6-R was not utilized as the measured elevation was not consistent with historical data.

- Groundwater flow direction in the overburden and bedrock aquifer systems is to the northwest and/or west towards Torne Brook. Groundwater gradients are similar in both aquifer systems and downward vertical gradients are noted throughout the Landfill perimeter, except at monitoring well clusters UP, 7-OS/7-I, 8, 9 and 10, which were observed to be slight (7-OS/7-I and 8) to moderately (UP, 9, and 10) upward. These vertical gradients are consistent with historical trends.

- No site-related VOCs were detected in groundwater at or above the respective laboratory MDLs.

- No exceedances of USEPA MCLs were noted at the private water supply wells or public water supply wells. The ARAR for sodium was exceeded at all sampled public water supply wells (SVWC-93, SVWC-94, SVWC-95, and SVWC-96), which is consistent with historical results.

- Applicable TOGS 1.1.1 standards were exceeded for antimony, chromium, iron, manganese, magnesium, nickel, selenium, sodium, and thallium at one or more monitoring wells.

- Historical trends are relatively consistent with the 2020 PCM analytical results. This was the fourth sampling event to include the newly installed upgradient monitoring well cluster (UP-OS, UP-I and UP-R).

- No NYSDEC-1,4-Dioxane screening levels were exceeded in any groundwater sample analyzed for 1,4-Dioxane.

- No NYSDEC-PFAS screening levels were exceeded in any groundwater sample analyzed for PFAS compounds.

- The volume of leachate/groundwater pumped from Landfill extraction wells to the RCSD No. 1 Western Ramapo Treatment Plant during this reporting period was 13.11 million gallons and has averaged slightly greater than 13.63 million gallons per year from 2009 through 2019.

- There were no reported discharge limit exceedances for the leachate/groundwater extracted from the Landfill and pumped to the RCSD No. 1 Western Ramapo Treatment Plant.

The following recommendations are made based on analytical results and observations during the reporting period:

- The damaged gas vents should be repaired and overgrown vegetation should be removed as part of standard maintenance as described in the Site Management Plan (SMP).

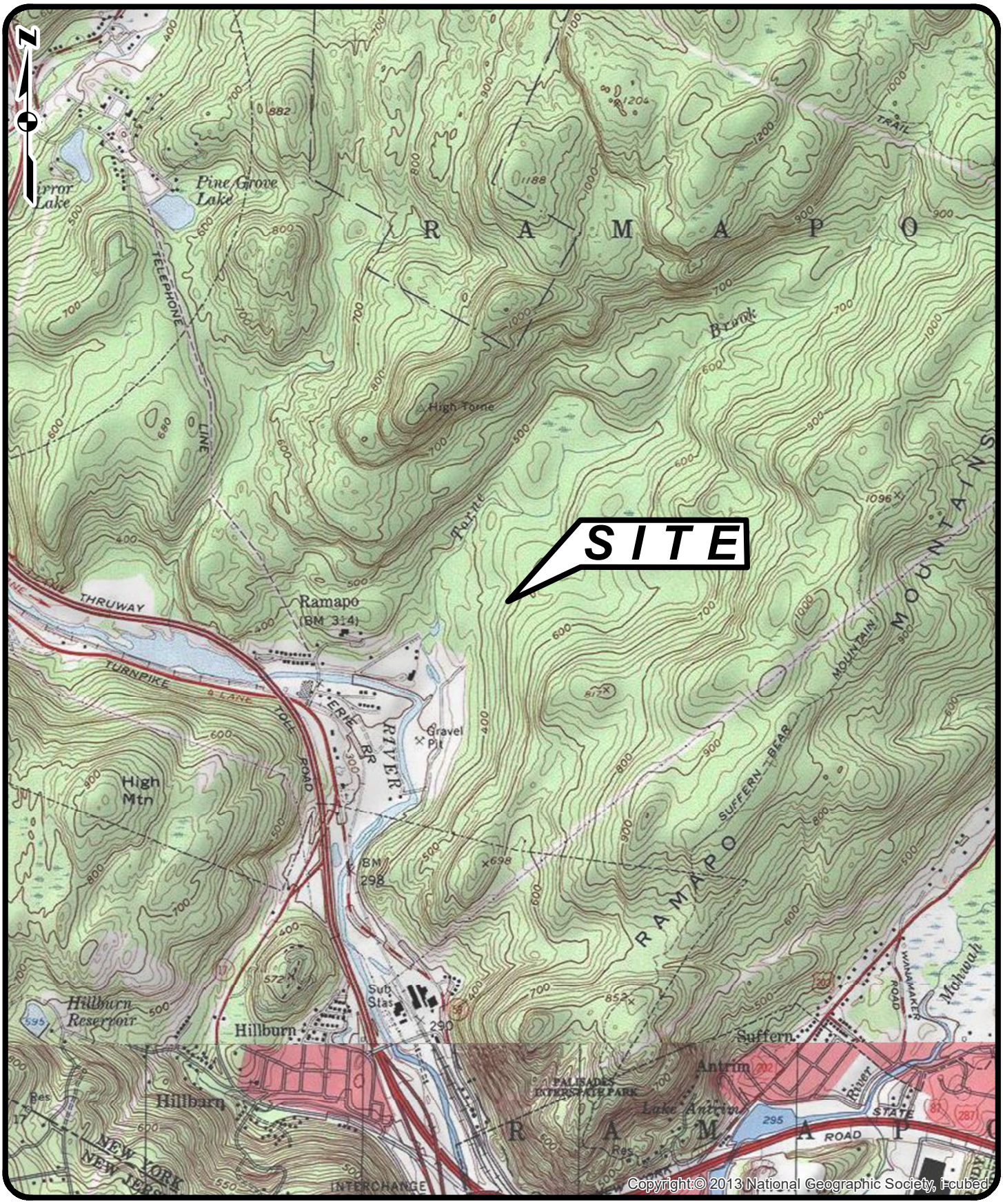
- The damaged concrete collar for the manhole cover at MH E-6 should be repaired.

- A well integrity assessment of bedrock monitoring well MW-6R, including re-surveying the measuring point, will be completed in 2021 to ensure groundwater elevation data is accurate.

- Monitoring is recommended to continue in accordance with the SMP requirements.

S:\Sterling\Projects\2000 Projects\Town of Ramapo - 20010\Reports\2020 Periodic Review Report (PRR)\2020_11-19_PRR_Town of Ramapo LF.docx

FIGURES



S:\Drawings\20010 - Town of Ramapo\GIS\20010001G- FIG 1 SITE LOC MAP.mxd\

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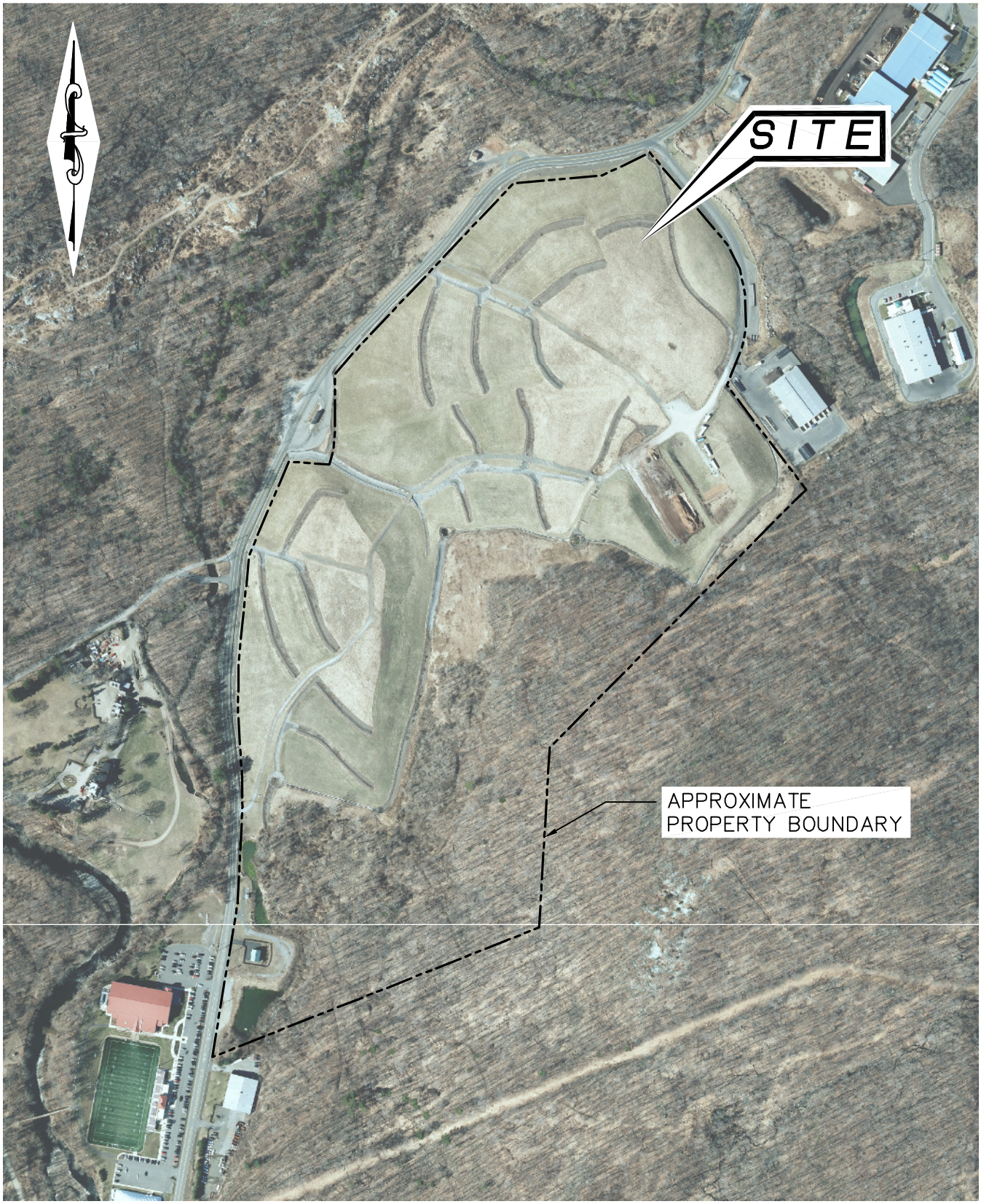
SITE LOCATION MAP
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO ROCKLAND CO., NY

PROJ.NO. 20010	DATE: 10/14/2020	SCALE: 1 " = 2,000 '	DWG.NO. 20010001G	FIGURE 1



MAP REFERENCE: NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013.

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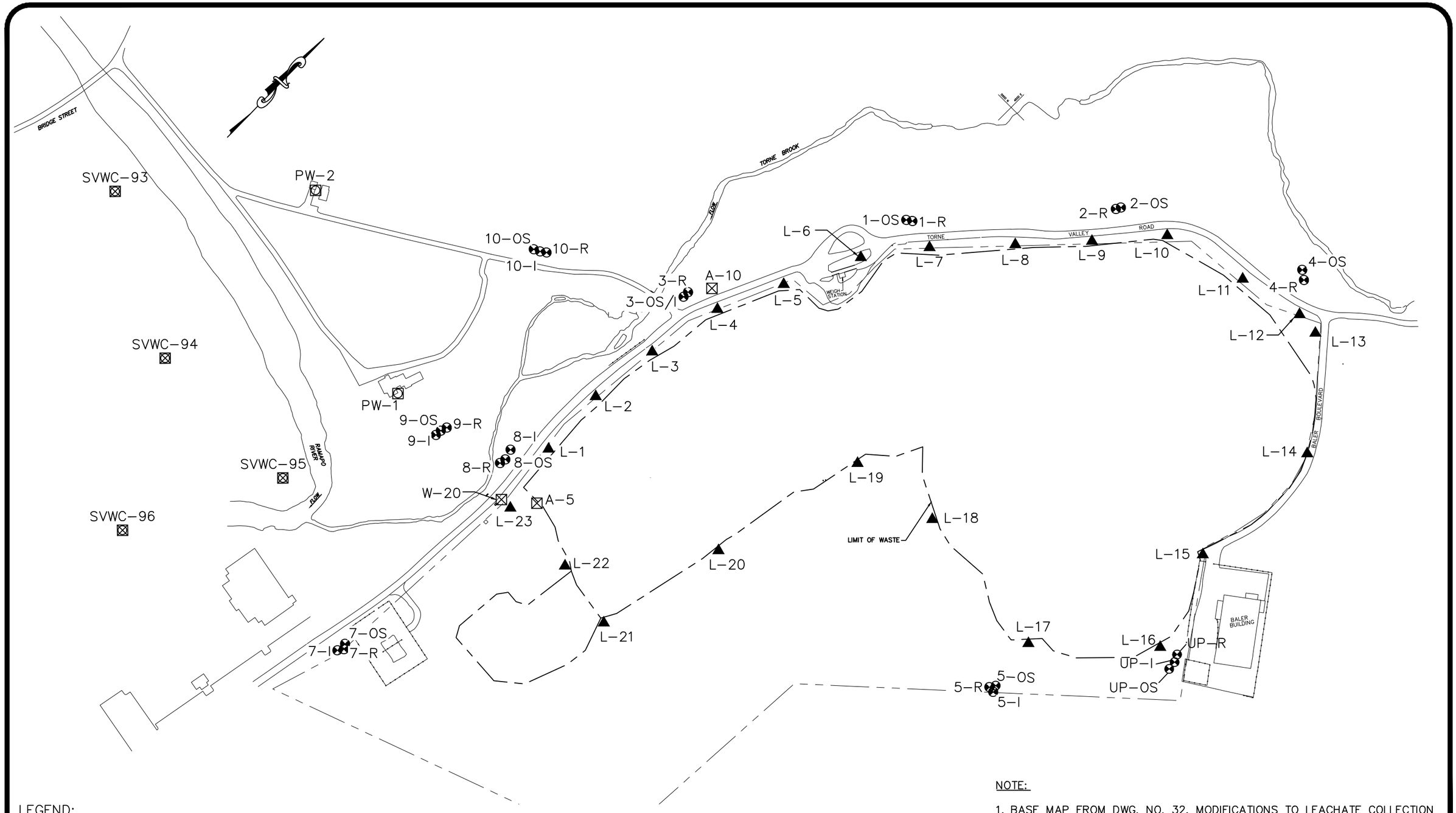
PROPERTY FEATURES
TOWN OF RAMAPO
LANDFILL

TOWN OF RAMAPO ROCKLAND CO., N.Y.

PROJ. No.:	DATE:	SCALE:	DWG. NO.	FIGURE
20010	6/24/14	1" = 500'	20010036	2



LEGEND:

UP-R ◔	MONITORING WELL CLUSTER (2016)
5-OS ◔	MONITORING WELL
PW-1 ⊡	EXISTING PRIVATE WATER SUPPLY WELL
SVWC-93 ⊠	EXISTING SUPPLY WELL (UNITED WATER/SUEZ-NA)
L-1 ▲	LANDFILL PERIMETER AIR MONITORING POINT
A-10 ⊠	ON-SITE RECEPTOR STRUCTURE

NOTE:

1. BASE MAP FROM DWG. NO. 32, MODIFICATIONS TO LEACHATE COLLECTION SYSTEM PLAN, BY URS CONSULTANTS, INC., BUFFALO, NY, JUNE 1994.

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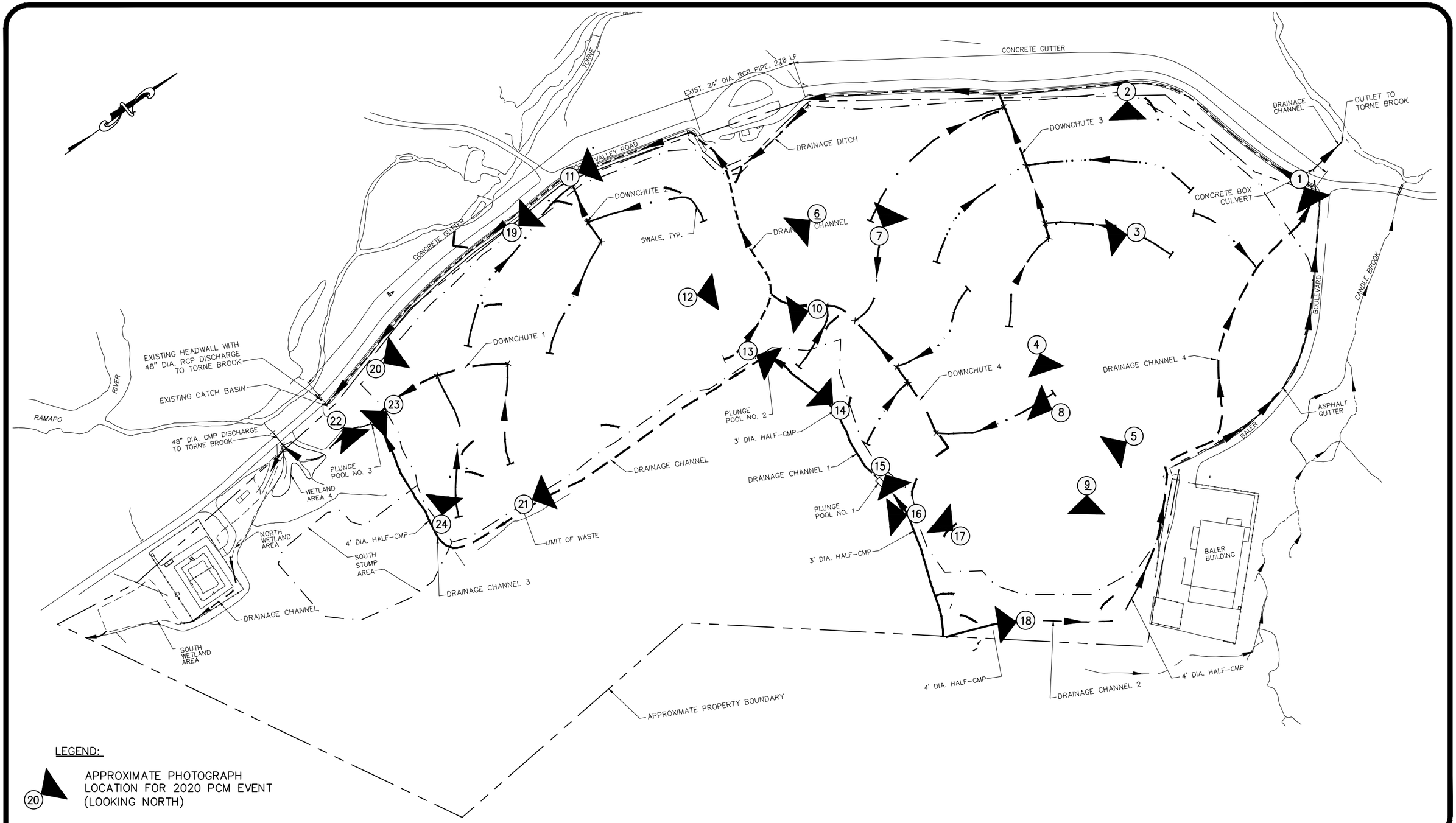
GROUNDWATER MONITORING WELLS AND AIR QUALITY MONITORING LOCATIONS

TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO ROCKLAND CO., N.Y.

PROJ. No.:	DATE:	SCALE:	DWG. NO.	FIGURE
20010	4/28/2017	1" = 300'	20010037	3



LEGEND:

20 APPROXIMATE PHOTOGRAPH LOCATION FOR 2020 PCM EVENT (LOOKING NORTH)

NOTES:

1. BASE MAP FROM DWG. NO. 31, SURFACE DRAINAGE PLAN, BY URS CONSULTANTS, INC., BUFFALO, NY, JUNE 1994.
2. INFORMATION SHOWN FOR EXISTING PIPE SIZES ARE AS PROVIDED B A.R. SPARACO, JR., P.L.S., POMONA, NEW YORK

0 125 250 500

1 inch = 250 ft.

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SURFACE WATER DRAINAGE AND EROSION CONTROL FEATURES, WITH PHOTOGRAPH LOCATIONS
TOWN OF RAMAPO LANDFILL
TOWN OF RAMAPO ROCKLAND CO., N.Y.

PROJ. No.:	20010	DATE:	10/14/2020	SCALE:	1" = 250'	DWG. NO.	20010054	FIGURE	4

S:\Drawings\20010 - Town of Ramapo\20010054_F-4-SurfaceWaterAndControlFeatures 2020.dwg 10/14/2020 2:41 PM

BRIDGE STREET

RAMAPO RIVER

TORNE BROOK

TORNE BROOK ROAD

TORNE VALLEY ROAD

LANDFILL

SVWC-93

SVWC-94

SVWC-95

SVWC-96

PW-1

PW-2

10-OS
G.W. EL. = 313.44'

10-I

10-R

3-OS/I
G.W. EL. = 332.33'

3-R

1-OS
G.W. EL. = 361.63'

1-R

2-R

2-OS
G.W. EL. = 405.85'

4-OS
G.W. EL. = 444.50'

4-R

6-R

6-I

9-I

9-R

9-OS
G.W. EL. = 297.84'

8-I

8-R

8-OS
G.W. EL. = 305.65'

7-R

7-I

7-OS
G.W. EL. = 292.32'

5-OS
G.W. EL. = 566.01'

5-R

5-I

UP-R

UP-I

UP-OS
G.W. EL. = 528.01'

300'

320'

340'

360'

380'

400'

420'

440'

460'

480'

500'

520'

540'

560'

LEGEND:

- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION
- APPROXIMATE LANDFILL COVER SYSTEM BOUNDARY
- APPROXIMATE LANDFILL PROPERTY BOUNDARY
- 1-OS — MONITORING WELL
- G.W. EL. = 361.63' — GROUNDWATER ELEVATION FOR 10/5/2020 MONITORING EVENT

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SHALLOW OVERBURDEN AQUIFER GROUNDWATER ELEVATION CONTOURS – OCTOBER 5, 2020

TOWN OF RAMAPO
LANDFILL

TOWN OF RAMAPO ROCKLAND CO., N.Y.

PROJ. No.:	20010	DATE:	10/13/2020	SCALE:	1" = 300'	DWG. NO.	20010053	FIGURE	5

BRIDGE STREET

TORNE BROOK

RAMAPO RIVER

TORNE BROOK ROAD

TORNE VALLEY RD

LANDFILL

SVWC-93

SVWC-94

SVWC-95

SVWC-96

PW-1

PW-2

10-OS

10-I

10-R
G.W. EL. = 314.42'

3-R
G.W. EL. = 332.08'

3-OS

1-OS

1-R
G.W. EL. = 360.67'

2-OS

2-R
G.W. EL. = 401.73'

4-OS

4-R
G.W. EL. = 443.05'

6-R
G.W. EL. = 432.30'*

6-I

9-R
G.W. EL. = 293.65'

9-I

9-OS

8-I

8-R
G.W. EL. = 306.28'

8-OS

7-OS

7-I

7-R
G.W. EL. = 292.37'

5-OS

5-I

5-R
G.W. EL. = 553.22'

UP-OS

UP-R
G.W. EL. = 535.25'

UP-I

300'
320'
340'
360'
380'
400'
420'
440'
460'
480'
500'
520'
540'

LEGEND:

500' — GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

APPROXIMATE LANDFILL COVER SYSTEM BOUNDARY

APPROXIMATE LANDFILL PROPERTY BOUNDARY

1-R — MONITORING WELL

G.W. EL. = 360.67' — GROUNDWATER ELEVATION FOR 10/5/2020 MONITORING EVENT

* BEDROCK GROUNDWATER ELEVATION FOR WELL 6-R WAS NOT UTILIZED AS THE MEASURED ELEVATION WAS NOT CONSISTENT WITH HISTORICAL DATA

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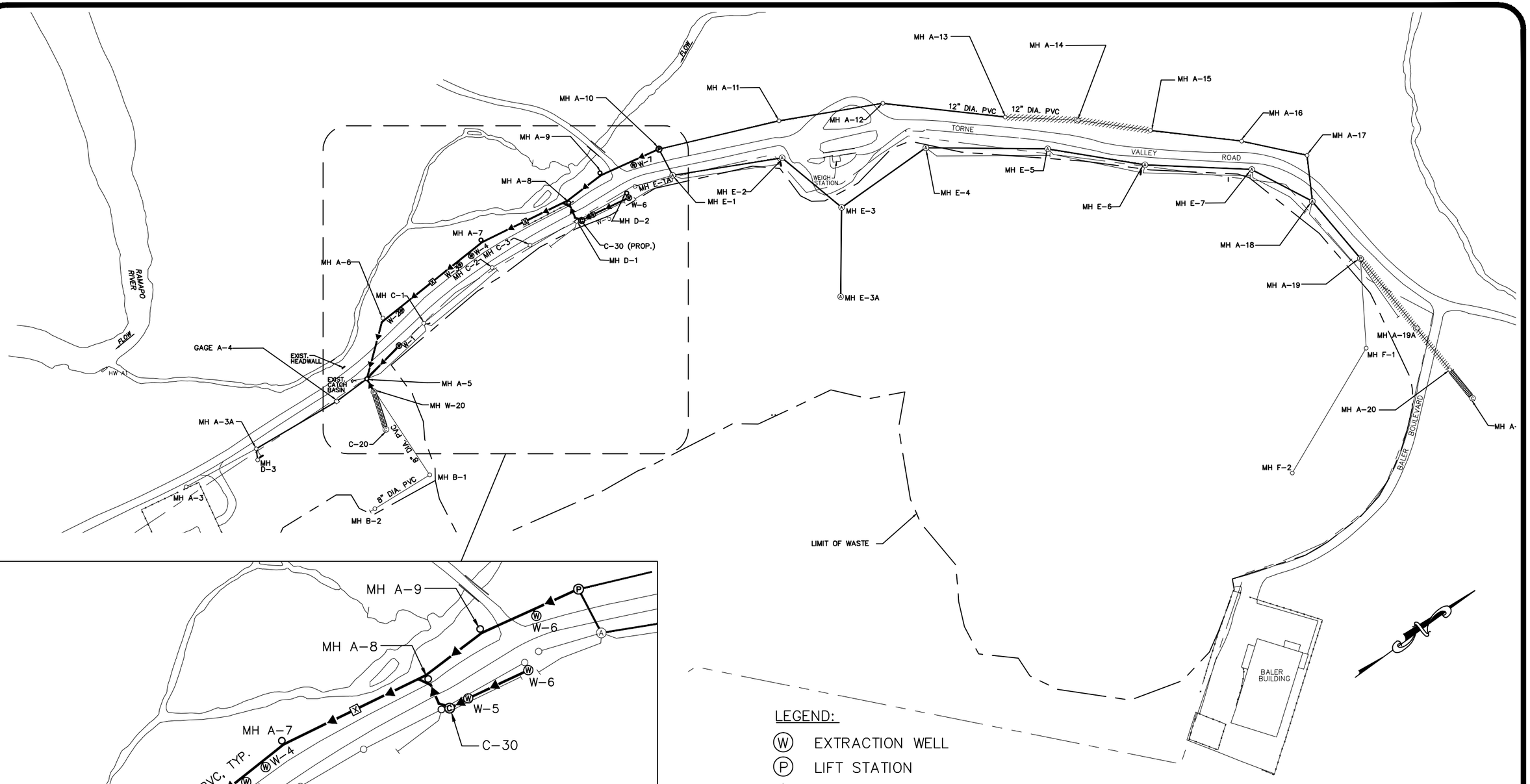
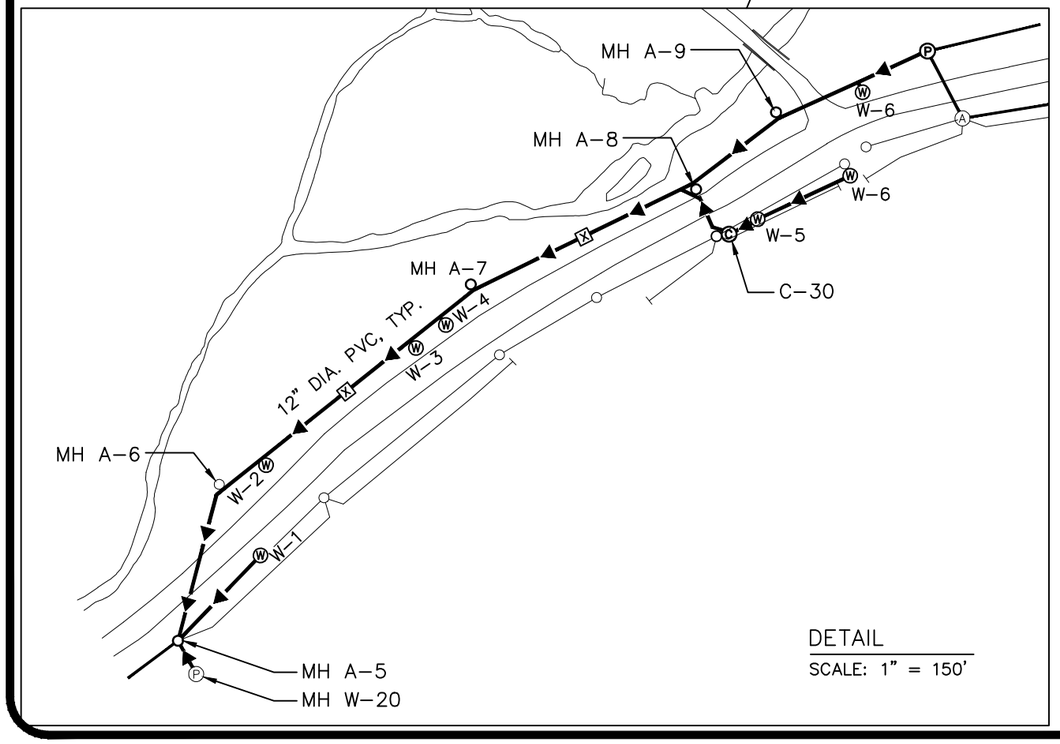
BEDROCK AQUIFER GROUNDWATER ELEVATION CONTOURS – OCTOBER 5, 2020
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO — ROCKLAND CO., N.Y.

PROJ. No.:	DATE:	SCALE:	DWG. NO.	FIGURE
20010	10/13/2020	1" = 300'	20010052	6

S:\Drawings\20010 - Town of Ramapo\20010052_F-6 - Bedrock GW Cont 2020.dwg CAD 10/13/2020





DETAIL
SCALE: 1" = 150'

LEGEND:

- (W) EXTRACTION WELL
- (P) LIFT STATION
- ○ MANHOLE COVER FOR LEACHATE COLLECTION SYSTEM

NOTE:

1. BASE MAP FROM DWG. NO. 32, MODIFICATIONS TO LEACHATE COLLECTION SYSTEM PLAN, BY URS CONSULTANTS, INC., BUFFALO, NY, JUNE 1994.

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LEACHATE COLLECTION SYSTEM – EXTRACTION WELLS AND LIFT STATIONS LOCATIONS
TOWN OF RAMAPO
LANDFILL
TOWN OF RAMAPO ROCKLAND CO., N.Y.

PROJ. No.:	20010	DATE:	8/1/14	SCALE:	1"=250'	DWG. NO.	20010041	FIGURE	7

TABLES

TABLE 1

Summary of Air Monitoring Results (10/5/2020 - 10/8/2020)
Town of Ramapo Landfill

Monitoring Location [(1)]	LEL Reading (% LEL)	H_2S Reading (ppm)	VOC Reading (ppm)
Monitoring Wells:			
1-OS	0.0%	0.0	0.0
1-R	0.0%	0.0	0.0
2-OS	0.0%	0.0	0.0
2-R	0.0%	0.0	0.0
3-OS/I	0.0%	0.0	0.0
3-R	0.0%	0.0	0.0
4-OS	0.0%	0.0	0.0
4-I	0.0%	0.0	0.0
4-R	0.0%	0.0	0.0
5-OS	0.0%	0.0	0.0
5-R	0.0%	0.0	0.0
6-I	0.0%	0.0	0.0
6-R	0.0%	0.0	0.0
7-OS	0.0%	0.0	0.0
7-I	0.0%	0.0	0.0
7-R	0.0%	0.0	0.0
8-OS	0.0%	0.0	0.0
8-I	0.0%	0.0	0.0
8-R	0.0%	0.0	0.0
9-OS	0.0%	0.0	0.0
9-I	0.0%	0.0	0.0
9-R	0.0%	0.0	0.0
10-OS	0.0%	0.0	0.0
10-I	0.0%	0.0	0.0
10-R	0.0%	0.0	0.0
UP-OS	0.0%	0.0	0.0
UP-I	0.0%	0.0	0.0
UP-R	0.0%	0.0	0.0
Baler Building (Breathing Zone, North Corner)	0.0%	0.0	0.0
Baler Building (Breathing Zone, East Corner)	0.0%	0.0	0.0
Baler Building (Breathing Zone, South Corner)	0.0%	0.0	0.0
Baler Building (Breathing Zone, West Corner)	0.0%	0.0	0.0
Manhole A-5	16.0%	0.0	0.0
Lift Station A-10	21.0%	0.0	0.0
Lift Station W-20	0.0%	0.0	0.0
Landfill Perimeter (Breathing Zone, L1 through L23)	0.0%	0.0	0.0

NOTES:

LEL = Lower Explosive Limit

H_2S = Hydrogen Sulfide

VOCs = Volatile Organic Compounds measured using Multi-RAE meter.

ppm = parts per million

[(1)] See Figure 3 for Air Monitoring Locations

Summary of Analytical Parameters and Method References
Town of Ramapo Landfill

Parameter	Document/Method No.	Reference
Specific Conductance	120.1	1
Temperature	170.1	1
Static Water Level	---	---
Floaters or Sinkers	---	---
pH	150.1	1
Eh	D1498	2
Field Observations	---	---
TKN	351.3	1
COD	5220D	1
Alkalinity	2320B	1
Hardness as $CaCO_3$	130.1	1
Site Related Volatiles*:		
1, 1-Dichloroethane	624.1	1
Vinyl Chloride	624.1	1
Benzene	624.1	1
Chlorobenzene	624.1	1
TAL Metals**	NYSDEC ASP (USEPA 200.7/USEPA 200.8/USEPA 245.1/USEPA 522)	1
1,4-Dioxane	8270D-SIM	3
PFAS	134 / Modified 537	4

References:

1. New York State Department of Environmental Conservation (NYSDEC) Analytical Services Protocol (ASP) 9/89, 12/91 Revisions.
2. American Society for Testing & Materials, ASTM, 1989.
3. USEPA Health Advisory Level (HAL) for 1,4 Dioxane in drinking water (35 µg/L).
4. NYSDEC DER, Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), October 2020.

--- Parameters will be measured by Field Personnel or Reference is not available.

Notes:

* Revised in Accordance with the NYSDEC's October 27, 2003 post-closure monitoring variance approval.

** Laboratory reporting limits (RL) must be equal to or less than the applicable water quality standard. Specifically, the RL for Antimony must be 3.0 µg/L or less and for Thallium must be 0.5 µg/L or less.

TABLE 3

Summary of Field Parameter Measurements (10/5/2020- 10/8/2020)
Town of Ramapo Landfill

Parameter		Static Water Level[1]	Specific Conductivity	Temperature	pH	ORP	Turbidity
Units		feet	mS/cm	degrees C	pH Units	mV	NTU
Title 6 Part 703.5 Groundwater Standard		---	---	---	6.5<pH< 8.5	--	5.0
Well Sample ID	**Date**						
1-OS	**10/8/2020**	17.58	0.924	13.4	**6.33**	44.7	**42.85**
1-I	**10/5/2020**	16.42	---	---	---	---	---
1-R	**10/5/2020**	18.92	---	---	---	---	---
2-OS	**10/8/2020**	16.89	0.671	14.2	6.83	58.6	**32.32**
2-I	**10/5/2020**	18.86	---	---	---	---	---
2-R	**10/5/2020**	20.28	---	---	---	---	---
3-OS/I	**10/8/2020**	13.44	0.825	15.3	**6.43**	103.2	**97.67**
3-R	**10/5/2020**	13.43	---	---	---	---	---
4-OS	**10/8/2020**	7.92	0.739	13.4	**6.38**	86.3	**27.27**
4-I	**10/5/2020**	11.79	---	---	---	---	---
4-R	**10/5/2020**	9.79	---	---	---	---	---
5-OS	**10/5/2020**	18.86	---	---	---	---	---
5-I	**10/5/2020**	20.15	---	---	---	---	---
5-R	**10/5/2020**	31.53	---	---	---	---	---
6-I	**10/5/2020**	18.09	---	---	---	---	---
6-R	**10/5/2020**	30.45	---	---	---	---	---
7-OS	**10/8/2020**	17.11	0.329	13.1	**6.33**	129.6	**62.75**
7-I	**10/5/2020**	16.34	---	---	---	---	---
7-R	**10/5/2020**	16.98	---	---	---	---	---
8-OS	**10/7/2020**	14.56	0.327	13.8	**6.18**	112.8	**10.05**
8-I	**10/7/2020**	15.45	0.933	12.7	6.56	-22.3	**52.63**
8-R	**10/7/2020**	14.24	1.186	13.1	6.97	125.7	**9.30**
9-OS	**10/6/2020**	10.16	0.079	15.6	**6.03**	182.1	1.61
9-I	**10/6/2020**	12.19	0.176	15.2	**5.92**	162.7	**6.49**
9-R	**10/5/2020**	13.70	0.567	12.2	6.57	74.5	**5.37**
10-OS	**10/6/2020**	18.58	0.037	11.4	**5.19**	280.1	**8.31**
10-I	**10/6/2020**	17.28	0.095	9.7	**6.35**	168.1	4.04
10-R	**10/6/2020**	16.32	0.089	11.2	**6.27**	170.8	**6.78**
UP-OS	**10/5/2020**	10.88	0.211	13.6	8.13	114.9	**5.32**
UP-I	**10/5/2020**	9.94	0.166	13.0	8.15	130.5	**257.09**
UP-R	**10/5/2020**	0.34	0.120	13.9	7.73	115.6	4.82
PW-1	**10/6/2020**	---	0.149	11.9	6.66	142.9	0.12
PW-2	**10/6/2020**	---	0.243	11.9	6.82	158.0	1.78
SVWC-93	**10/6/2020**	---	0.622	15.3	**6.24**	250.8	0.10
SVWC-94	**10/6/2020**	---	0.615	16.1	6.74	149.0	1.16
SVWC-95	**10/6/2020**	---	0.567	15.5	6.83	150.4	1.03
SVWC-96	**10/6/2020**	---	0.575	15.3	6.79	144.8	3.69

NOTES :

[1] Measured from the top of the PVC or stainless steel well casing to water surface.

[2] Monitoring Well UP-R has artesian well characteristics. The static water level was exactly at the measuring point elevation.

Value in **BOLD** indicates an exceedance of applicable water quality standard or guidance value.

--- Denotes no standard or not measured.

TABLE 4

Summary of Groundwater Analytical Results (10/5/2020 - 10/8/2020)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS	NYSDEC-PFAS	UP-OS	UP-I	UP-R	1-OS	2-OS	3-OS/I	4-OS	7-OS	8-OS	8-I
			10/5/2020	10/5/2020	10/5/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	10/7/2020	10/7/2020
LEACHATE INDICATOR PARAMETERS, mg/L												
Alkalinity, Total	---	---	102	72	42	351	296	249	123	120	108	305
Chemical Oxygen Demand	---	---	2.7 U	2.7 U	5.2 J	19	38	86	2.8 J	26	2.7 U	5.2 J
Hardness	---	---	95.6	74.2	45.2	223	284	250	215	128	94	259
Total Kjeldahl Nitrogen	---	---	0.215 J	0.183 J	0.343	0.434	1.51	0.766	0.226 J	0.319	0.324	3.53
VOLATILE ORGANIC COMPOUNDS, µg/L												
1,1-Dichloroethane	5	---	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Benzene	1	--	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chlorobenzene	5	---	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Vinyl Chloride	2	---	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Total VOCs	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4 DIOXANE, µg/L												
1,4-Dioxane	---	35	0.0326 U	0.0326 U	0.0326 U	NS	NS	NS	NS	NS	NS	NS
PERFLUORINATED ALKYL ACIDS, ng/L												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	---	100	1.05 U	1.1 U	1.11 U	NS	NS	NS	NS	NS	NS	NS
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	---	100	1.16 U	1.21 U	1.22 U	NS	NS	NS	NS	NS	NS	NS
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	---	100	0.698 U	0.733 U	0.736 U	NS	NS	NS	NS	NS	NS	NS
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	---	100	0.562 U	0.59 U	0.593 U	NS	NS	NS	NS	NS	NS	NS
Perfluorobutanesulfonic Acid (PFBS)	---	100	0.206 U	0.217 U	0.218 U	NS	NS	NS	NS	NS	NS	NS
Perfluorobutanoic Acid (PFBA)	---	100	0.403 J	0.372 U	0.373 U	NS	NS	NS	NS	NS	NS	NS
Perfluorodecanesulfonic Acid (PFDS)	---	100	0.85 U	0.893 U	0.897 U	NS	NS	NS	NS	NS	NS	NS
Perfluorodecanoic Acid (PFDA)	---	100	0.264 U	0.277 U	0.278 U	NS	NS	NS	NS	NS	NS	NS
Perfluorododecanoic Acid (PFDoA)	---	100	0.323 U	0.339 U	0.34 U	NS	NS	NS	NS	NS	NS	NS
Perfluoroheptanesulfonic Acid (PFHpS)	---	100	0.597 U	0.627 U	0.63 U	NS	NS	NS	NS	NS	NS	NS
Perfluoroheptanoic Acid (PFHpA)	---	100	0.302 J	0.205 U	0.206 U	NS	NS	NS	NS	NS	NS	NS
Perfluorohexanesulfonic Acid (PFHxS)	---	100	0.326 U	0.343 U	0.344 U	NS	NS	NS	NS	NS	NS	NS
Perfluorohexanoic Acid (PFHxA)	---	100	0.462 J	0.302 J	0.359 J	NS	NS	NS	NS	NS	NS	NS
Perfluorononanoic Acid (PFNA)	---	100	0.302 J	0.284 U	0.286 U	NS	NS	NS	NS	NS	NS	NS
Perfluorooctanesulfonamide (FOSA)	---	100	0.503 U	0.529 U	0.531 U	NS	NS	NS	NS	NS	NS	NS
Perfluorooctanesulfonic Acid (PFOS)	---	10	0.437 U	0.459 U	0.461 U	NS	NS	NS	NS	NS	NS	NS
Perfluorooctanoic Acid (PFOA)	---	10	2.73	0.215 U	0.216 U	NS	NS	NS	NS	NS	NS	NS
Perfluoropentanoic Acid (PFPeA)	---	100	0.344 U	0.361 U	0.362 U	NS	NS	NS	NS	NS	NS	NS
Perfluorotetradecanoic Acid (PFTA)	---	100	0.215 U	0.226 U	0.227 U	NS	NS	NS	NS	NS	NS	NS
Perfluorotridecanoic Acid (PFTrDA)	---	100	0.284 U	0.298 U	0.299 U	NS	NS	NS	NS	NS	NS	NS
Perfluoroundecanoic Acid (PFUnA)	---	100	0.226 U	0.237 U	0.238 U	NS	NS	NS	NS	NS	NS	NS
PFAS, Total	---	500	4.199 J	0.302 J	0.359 J	NS	NS	NS	NS	NS	NS	NS

Notes:
NY-AWQS: New York T.O.G.S. 1.1,1. Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.
NYSDEC-PFAS: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), October 2020 / USEPA Health Advisory Level (HAL) for 1,4 Dioxane in drinking water (35 µg/L).
Bold = Value indicates reported concentration exceeds applicable water quality standards.
* Duplicate groundwater sample collected from bedrock monitoring well 9-R
** = The standard for the sum of iron and manganese is 0.5 mg/L.
--- Denotes no applicable water quality standard.
U = Analyte was not detected at or above laboratory method detection limit.
ND = Not Detected and No available Method Detection Limit (MDL) for this analyte.
[(a)] = The laboratory Method Detection Limit (MDL) was higher thant the NYTOGS 1.1.1. Groundwater Quality Standard.
F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximate.
NS = Not sampled.

TABLE 4

Summary of Groundwater Analytical Results (10/5/2020 - 10/8/2020)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS	NYSDEC-PFAS	8-R	9-OS	9-I	9-R	DUP10052020	10-OS	10-I	10-R	EB10052020	FB10052020	EB10062020
			10/7/2020	10/6/2020	10/6/2020	10/6/2020	10/5/2020	10/6/2020	10/6/2020	10/6/2020	10/5/2020	10/5/2020	10/6/2020
LEACHATE INDICATOR PARAMETERS, mg/L													
Alkalinity, Total	---	---	514	14.4	28.8	128	130	ND	24.9	24.2	NS	NS	NS
Chemical Oxygen Demand	---	---	7.5 J	2.7 U	2.7 U	2.7 U	2.8 J	2.7 U	2.7 U	2.7 U	NS	NS	NS
Hardness	---	---	533	20.1	26.3	137	139	7.92	32.8	29.6	NS	NS	NS
Total Kjeldahl Nitrogen	---	---	0.508	0.139 J	0.165 J	0.832	0.872	0.152 J	0.239 J	0.129 J	NS	NS	NS
VOLATILE ORGANIC COMPOUNDS, µg/L													
1,1-Dichloroethane	5	---	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	NS	NS	NS
Benzene	1	--	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	NS	NS	NS
Chlorobenzene	5	---	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	NS	NS	NS
Vinyl Chloride	2	---	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	NS	NS	NS
Total VOCs	---	---	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS	NS
1,4 DIOXANE, µg/L													
1,4-Dioxane	---	0.35	NS	0.0326 U	0.0326 U	2.69	2.76	0.0326 U	0.0326 U	0.0326 U	NS	NS	NS
PERFLUORINATED ALKYL ACIDS, ng/L													
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	---	100	NS	1.11 U	1.05 U	1.11 U	1.07 U	1.05 U	1.12 U	1.07 U	1.15 U	1.11 U	1.15 U
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	---	100	NS	1.22 U	1.15 U	1.22 U	1.18 U	1.16 U	1.23 U	1.18 U	1.26 U	1.22 U	1.26 U
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	---	100	NS	0.734 U	0.694 U	0.737 U	0.711 U	0.698 U	0.74 U	0.712 U	0.76 U	0.734 U	0.763 U
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	---	100	NS	0.592 U	0.559 U	0.594 U	0.573 U	0.562 U	0.597 U	0.574 U	0.613 U	0.592 U	0.615 U
Perfluorobutanesulfonic Acid (PFBS)	---	100	NS	1.14 J	3.54	4	3.49	0.207 U	0.219 U	0.211 U	0.225 U	0.217 U	0.226 U
Perfluorobutanoic Acid (PFBA)	---	100	NS	2.62	4.68	41.6	41.9	0.354 U	0.376 U	0.361 U	0.386 U	0.372 U	0.387 U
Perfluorodecanesulfonic Acid (PFDS)	---	100	NS	0.895 U	0.846 U	0.898 U	0.867 U	0.851 U	0.902 U	0.868 U	0.927 U	0.895 U	0.93 U
Perfluorodecanoic Acid (PFDA)	---	100	NS	0.278 U	0.414 J	0.279 U	0.269 U	0.264 U	0.28 U	0.269 U	0.287 U	0.278 U	0.288 U
Perfluorododecanoic Acid (PFDoA)	---	100	NS	0.34 U	0.321 U	0.341 U	0.329 U	0.323 U	0.342 U	0.329 U	0.352 U	0.34 U	0.353 U
Perfluoroheptanesulfonic Acid (PFHpS)	---	100	NS	0.628 U	0.594 U	0.631 U	0.609 U	0.597 U	0.634 U	0.609 U	0.65 U	0.628 U	0.653 U
Perfluoroheptanoic Acid (PFHpA)	---	100	NS	1.17 J	2.83	5.7	5.72	0.196 U	0.207 U	0.199 U	0.213 U	0.206 U	0.214 U
Perfluorohexanesulfonic Acid (PFHxS)	---	100	NS	0.5 J	0.331 J	2.22 F	2.23	0.326 U	0.346 U	0.333 U	0.356 U	0.343 U	0.357 U
Perfluorohexanoic Acid (PFHxA)	---	100	NS	1.32 J	3.04	9.41	9.52	0.33 J	0.324 J	0.34 J	0.374 J	0.332 J	0.395 J
Perfluorononanoic Acid (PFNA)	---	100	NS	0.913 J	1.12 J	23	23.4	0.271 U	0.287 U	0.276 U	0.295 U	0.285 U	0.296 U
Perfluorooctanesulfonamide (FOSA)	---	100	NS	0.53 U	0.5 U	0.532 U	0.513 U	0.504 U	0.534 U	0.513 U	0.548 U	0.53 U	0.55 U
Perfluorooctanesulfonic Acid (PFOS)	---	10	NS	3.56	4.13	5.36 F	5.71 F	0.438 U	0.464 U	0.446 U	0.476 U	0.46 U	0.478 U
Perfluorooctanoic Acid (PFOA)	---	10	NS	8.66	7.03	9.85	9.56	0.205 U	0.217 U	0.209 U	0.223 U	0.215 U	0.224 U
Perfluoropentanoic Acid (PFPeA)	---	100	NS	0.46 J	2.94	9.24	9.04	0.344 U	0.365 U	0.35 U	0.374 U	0.362 U	0.376 U
Perfluorotetradecanoic Acid (PFTA)	---	100	NS	0.226 U	0.214 U	0.227 U	0.219 U	0.215 U	0.228 U	0.22 U	0.234 U	0.226 U	0.235 U
Perfluorotridecanoic Acid (PFTrDA)	---	100	NS	0.299 U	0.282 U	0.3 U	0.29 U	0.284 U	0.301 U	0.29 U	0.309 U	0.299 U	0.31 U
Perfluoroundecanoic Acid (PFUnA)	---	100	NS	0.237 U	0.224 U	0.238 U	0.23 U	0.226 U	0.239 U	0.23 U	0.246 U	0.237 U	0.247 U
PFAS, Total	---	500	NS	20.343 J	30.055 J	110.38	110.57	0.33 J	0.324 J	0.34 J	0.374 J	0.332 J	0.395 J

Notes:
NY-AWQS: New York T.O.G.S. 1.1,1. Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.
NYSDEC-PFAS: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), October 2020 / USEPA Health Advisory Level (HAL) for 1,4 Dioxane in drinking water (0.35 µg/L).
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** = The standard for the sum of iron and manganese is 0.5 mg/L.
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[(a)] = The laboratory Method Detection Limit (MDL) was higher thant the NYTOGS 1.1.1. Groundwater Quality Standard.
F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
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TABLE 4

Summary of Groundwater Analytical Results (10/5/2020 - 10/8/2020)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS	NYSDEC-PFAS	UP-OS	UP-I	UP-R	1-OS	2-OS	3-OS/I	4-OS	7-OS	8-OS	8-I
			10/5/2020	10/5/2020	10/5/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	10/7/2020	10/7/2020
TOTAL METALS, mg/L												
Aluminum	---	---	0.0454	0.0955	0.00424 J	0.133	0.108	0.975	0.055 J	1.82	0.0216	0.004 J
Antimony	0.003	---	0.00042 U	0.00194 J	0.00042 U	0.007 U[a]	0.007 U[a]	0.007 U[a]	0.007 U[a]	0.007 U[a]	**0.00354 J**	0.00042 U
Arsenic	0.025	---	0.00035 J	0.00041 J	0.00016 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00022 J	0.00447
Barium	1	---	0.00286	0.00608	0.0024	0.049	0.046	0.034	0.016	0.04	0.0078	0.03446
Beryllium	0.003	---	0.0001 U	0.0001 U	0.0001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0001 U	0.0001 U
Cadmium	0.005	---	0.00005 U	0.00005 U	0.00005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00005 U	0.00005 U
Calcium	---	---	28.8	22.5	12.6	65.5	95.2	81.4	56.2	36.5	24.6	66.6
Chromium	0.05	---	0.00132	0.02597	0.00201	**0.318**	**0.094**	**3.19**	**0.106**	**0.573**	**0.06122**	0.00104
Cobalt	---	---	0.00016 U	0.00048 J	0.00016 U	0.007 J	0.002 U	0.008 J	0.002 U	0.046	0.00029 J	0.00631
Copper	0.2	---	0.00057 J	0.00146	0.00038 U	0.003 J	0.02	0.018	0.002 U	0.012	0.00161	0.00038 U
Iron	0.3**	---	0.062	0.266	0.0254 J	**9.66**	**1.05**	**13.6**	**1.18**	**5.31**	**0.552**	**9.63**
Lead	0.025	---	0.00034 U	0.00034 U	0.00034 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.00034 U	0.00034 U
Magnesium	35	---	7.2	4.84	3.77	14.5	11.2	11.3	18	8.95	6.62	18.4
Manganese	0.3**	---	0.00157	0.00561	0.00077 J	**13**	**0.026**	**1.5**	**0.463**	**0.586**	**0.1835**	**3.479**
Mercury	0.0007	---	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U
Nickel	0.1	---	0.00055 U	0.01049	0.00093 J	0.05	0.025 J	**0.711**	0.064	0.011 J	0.01766	0.00665
Potassium	---	---	0.758	0.53	0.583	2.36 J	10.5	3.91	1.94 J	3.8	1.55	8.46
Selenium	0.01	---	0.00173 U	0.00173 U	0.00173 U	**0.013**	0.004 U	0.004 U	0.004 U	0.004 U	0.00173 U	0.00173 U
Silver	0.05	---	0.00016 U	0.00016 U	0.00016 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.00016 U	0.00016 U
Sodium	20	---	4.06	3.68	4.49	**112**	**24.8**	**60.8**	**51.8**	12	**26.3**	**91.4**
Thallium	0.0005	---	0.00014 U	0.00021 J	0.00014 U	**0.015 J**	0.003 U[a]	**0.005 J**	0.003 U[a]	**0.004 J**	0.00045 J	0.00034 J
Vanadium	---	---	0.00157 U	0.00273 J	0.00157 U	0.002 U	0.002 U	0.012	0.002 U	0.007 J	0.00157 U	0.00157 U
Zinc	2	---	0.00341 U	0.00341 U	0.00341 U	0.003 J	0.003 J	0.009 J	0.006 J	0.007 J	0.00341 U	0.00341 U

Notes:
NY-AWQS: New York T.O.G.S. 1.1,1. Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.
Bold = Value indicates reported concentration exceeds applicable water quality standards.
* Duplicate groundwater sample collected from bedrock monitoring well 9-R
** = The standard for the sum of iron and manganese is 0.5 mg/L.
--- Denotes no applicable water quality standard.
U = Analyte was not detected at or above laboratory method detection limit.
ND = Not Detected and No available Method Detection Limit (MDL) for this analyte.
[(a)] = The laboratory Method Detection Limit (MDL) was higher thant the NYTOGS 1.1.1. Groundwater Quality Standard.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximate.
F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
NS = Not sampled.

TABLE 4

Summary of Groundwater Analytical Results (10/5/2020 - 10/8/2020)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS	NYSDEC-PFAS	8-R	9-OS	9-I	9-R	DUP10052020	10-OS	10-I	10-R	FB10052020	EB10052020	EB10062020
			10/7/2020	10/6/2020	10/6/2020	10/6/2020	10/5/2020	10/6/2020	10/6/2020	10/6/2020	10/5/2020	10/5/2020	10/6/2020
TOTAL METALS, mg/L													
Aluminum	---	---	0.016	0.0073 J	0.0201	0.00918 J	0.015	0.359	0.016	0.0636	NS	NS	NS
Antimony	0.003	---	0.00048 J	0.00042 U	0.00042 U	0.00074 J	0.00202 J	0.00042 U	0.00042 U	0.00042 U	NS	NS	NS
Arsenic	0.025	---	0.00067	0.00016 U	0.00016 U	0.00046 J	0.00056	0.00021 J	0.00016 U	0.00016 U	NS	NS	NS
Barium	1	---	0.01437	0.00465	0.00991	0.0158	0.01667	0.0079	0.00117	0.0041	NS	NS	NS
Beryllium	0.003	---	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.00014 J	0.0001 U	0.0001 U	NS	NS	NS
Cadmium	0.005	---	0.00029	0.00005 U	0.00005 U	0.00045	0.00047	0.00005 U	0.00005 U	0.00005 U	NS	NS	NS
Calcium	---	---	136	5.94	7.9	41.1	40.6	2.68	9.52	9.32	NS	NS	NS
Chromium	0.05	---	**0.05239**	0.00081 J	0.0468	0.00355	0.00361	0.00031 J	0.00034 J	0.02904	NS	NS	NS
Cobalt	---	---	0.00439	0.00016 U	0.00016 U	0.00112	0.00122	0.00029 J	0.00016 U	0.00134	NS	NS	NS
Copper	0.2	---	0.00402	0.0004 J	0.00081 J	0.00191	0.00165	0.00099 J	0.00038 U	0.00154	NS	NS	NS
Iron	0.3**	---	**1.56**	0.026 J	**0.305**	**0.533**	**0.606**	0.181	0.039 J	0.151	NS	NS	NS
Lead	0.025	---	0.00227	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00125	NS	NS	NS
Magnesium	35	---	**66.8**	1.46	1.94	10.1	9.89	0.495	2.81	1.97	NS	NS	NS
Manganese	0.3**	---	**0.5774**	0.00063 J	0.00587	**1.137**	**1.189**	0.02056	0.00047 J	0.02264	NS	NS	NS
Mercury	0.0007	---	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	NS	NS	NS
Nickel	0.1	---	0.02297	0.00055 U	0.00077 J	0.08511	0.08383	0.00072 J	0.00055 U	0.00592	NS	NS	NS
Potassium	---	---	2.8	0.712	1.08	10.2	9.96	0.371	0.832	0.72	NS	NS	NS
Selenium	0.01	---	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	NS	NS	NS
Silver	0.05	---	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	NS	NS	NS
Sodium	20	---	**71.5**	6.12	**26.1**	**50**	**48.8**	2.3	4.23	4.28	NS	NS	NS
Thallium	0.0005	---	0.00021 J	0.00014 U	0.00014 U	0.00014 U	0.00018 J	0.00014 U	0.00027 J	0.00016 J	NS	NS	NS
Vanadium	---	---	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	NS	NS	NS
Zinc	2	---	0.00726 J	0.00341 U	0.00341 U	0.00341 U	0.00341 U	0.00341 U	0.00341 U	0.00341 U	NS	NS	NS

Notes:
NY-AWQS: New York T.O.G.S. 1.1,1. Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.
Bold = Value indicates reported concentration exceeds applicable water quality standards.
* Duplicate groundwater sample collected from bedrock monitoring well 9-R
** = The standard for the sum of iron and manganese is 0.5 mg/L.
--- Denotes no applicable water quality standard.
U = Analyte was not detected at or above laboratory method detection limit.
ND = Not Detected and No available Method Detection Limit (MDL) for this analyte.
(a) = The laboratory Method Detection Limit (MDL) was higher thant the NYTOGS 1.1.1. Groundwater Quality Standard.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximate.
F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
NS = Not sampled.

TABLE 5

Summary of Analytical Results for Downgradient Drinking Water Supply Wells (10/6/2020)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS (1)	EPA-MCL (2)	NYSDEC-PFAS (3)	PW-1	PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
LEACHATE INDICATOR PARAMETERS, mg/L									
Alkalinity, Total	---	---	---	26.6	68.4	63	64.8	68.7	59.3
Chemical Oxygen Demand	---	---	---	2.8 J	2.7 U	2.7 U	2.8 J	2.7 U	2.7 U
Hardness	---	---	---	26.1	92.5	101	97.9	94.1	2.01
Nitrogen, Total Kjeldahl	---	---	---	0.152 J	0.281 J	0.095 J	0.118 J	0.15 J	0.182 J
VOLATILE ORGANIC COMPOUNDS, µg/L									
1,1-Dichloroethane	5	---	---	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Benzene	1	5	---	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Chlorobenzene	5	100	---	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Vinyl chloride	2	2	---	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U
Total VOCs	---	---	---	ND	ND	ND	ND	ND	ND
1,4 DIOXANE, µg/L									
1,4-Dioxane	---	--- / 1***	35	NS	NS	NS	0.0326 U	0.412	NS
PERFLUORINATED ALKYL ACIDS (PFAS), ng/L									
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	---	---	100	NS	NS	NS	1.08 U	1.04 U	NS
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	---	---	100	NS	NS	NS	1.19 U	1.15 U	NS
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	---	---	100	NS	NS	NS	0.72 U	0.692 U	NS
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	---	---	100	NS	NS	NS	0.58 U	0.558 U	NS
Perfluorobutanesulfonic Acid (PFBS)	---	---	100	NS	NS	NS	1.9	3.04	NS
Perfluorobutanoic Acid (PFBA)	---	---	100	NS	NS	NS	2.53	5.72	NS
Perfluorodecanesulfonic Acid (PFDS)	---	---	100	NS	NS	NS	0.877 U	0.844 U	NS
Perfluorodecanoic Acid (PFDA)	---	---	100	NS	NS	NS	0.379 J	0.413 J	NS
Perfluorododecanoic Acid (PFDoA)	---	---	100	NS	NS	NS	0.333 U	0.32 U	NS
Perfluoroheptanesulfonic Acid (PFHpS)	---	---	100	NS	NS	NS	0.616 U	0.592 U	NS
Perfluoroheptanoic Acid (PFHpA)	---	---	100	NS	NS	NS	1.68 J	2.21	NS
Perfluorohexanesulfonic Acid (PFHxS)	---	---	100	NS	NS	NS	0.759 J	0.971 J	NS
Perfluorohexanoic Acid (PFHxA)	---	---	100	NS	NS	NS	4.6	4.56	NS
Perfluorononanoic Acid (PFNA)	---	---	100	NS	NS	NS	2.14	8.95	NS
Perfluorooctanesulfonamide (FOSA)	---	---	100	NS	NS	NS	0.519 U	0.499 U	NS
Perfluorooctanesulfonic Acid (PFOS)	---	---/10****	10	NS	NS	NS	3.38	3.95	NS
Perfluorooctanoic Acid (PFOA)	---	---/10****	10	NS	NS	NS	3.87	5.67	NS
Perfluoropentanoic Acid (PFPeA)	---	---	100	NS	NS	NS	4.86	4.88	NS
Perfluorotetradecanoic Acid (PFTA)	---	---	100	NS	NS	NS	0.222 U	0.214 U	NS
Perfluorotridecanoic Acid (PFTrDA)	---	---	100	NS	NS	NS	0.293 U	0.282 U	NS
Perfluoroundecanoic Acid (PFUnA)	---	---	100	NS	NS	NS	0.233 U	0.589 J	NS
PFAS, Total	---	---	500	NS	NS	NS	26.098	40.953	NS
TOTAL METALS, mg/L									
Aluminum	---	0.05-0.2**	---	0.00327 U	0.00327 U	0.00327 U	0.00327 U	0.00327 U	0.00327 U
Antimony	0.006	0.006	---	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U
Arsenic	0.01	0.01	---	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
Barium	2.0	2.0	---	0.00526	0.0014	0.01387	0.0198	0.01889	0.0121
Beryllium	0.004	0.004	---	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Cadmium	0.005	0.005	---	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Calcium	---	---	---	7.76	34.2	31.7	29.9	29.8	26.8
Chromium	0.1	0.1	---	0.00035 J	0.00017 U	0.00018 J	0.00017 U	0.00027 J	0.0004 J
Cobalt	---	---	---	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
Copper	---	1.3	---	0.03185	0.00851	0.00339	0.0033	0.0205	0.00673
Iron	0.3*	0.3**	---	0.0291 J	0.0467 J	0.0191 U	0.0191 U	0.0191 U	0.03 J
Lead	---	0.015	---	0.00071 J	0.00034 U	0.00034 U	0.00034 U	0.00063 J	0.00034 U
Magnesium	---	---	---	2.07	3.81	8.06	7.89	7.76	7.07
Manganese	0.3*	0.05**	---	0.00049 J	0.00049 J	0.00044 U	0.00075 J	0.0627	0.00044 U
Mercury	0.002	0.002	---	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U	0.00009 U
Nickel	---	---	---	0.00055 U	0.00055 U	0.00055 U	0.0006 J	0.00107 J	0.00059 J
Potassium	---	---	---	0.947	1.1	2.65	2.41	2.6	2.01
Selenium	0.05	0.05	---	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U
Silver	0.1	0.1**	---	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
Sodium	---[4]	---[4]	---	17.6	8.38	80.1	82.9	73.4	74
Thallium	0.002	0.002	---	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U
Vanadium	---	---	---	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U
Zinc	5.0	5.0**	---	0.01602	0.01255	0.00397 J	0.00541 J	0.03337	0.01186

Notes:

(1): NY-AWQS: New York T.O.G.S. 1.1.1. Ambient Water Quality Standards criteria reflects all addendum to criteria through June 2004.

(2): NYSDOH Part 5: NYSDOH Part 5, SubPart 5-1 Public Water Supply Standards: MCLs Tables 1 - 7; Effective October 1, 2007 / USEPA MCLs: USEPA - Primary Drinking Water Standards

(3) : NYSDEC: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), October 2020 / USEPA Health Advisory Level (HAL) for 1,4 Dioxane in drinking water (35 µg/L).

(4) : While there is no Maximum Contaminant Level (MCL) for Sodium, people on severly restricted Sodium diets should consult with the County Health Department for guidance if reported Sodium concentration is higher than 20 mg/L.

Bold = Value indicates reported concentration exceeds applicable water quality standards.

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximate.

U = Analyte was not detected at or above the laboratory method detection limit.

ND = Not Detected

NS = Not Sampled.

* = The standard for the sum of iron and manganese is 0.5 mg/L.

** = USEPA Secondary Drinking Water Standard. This standard is associated with aesthetic characteristics of the sample and not adverse health effects.

*** = NYSDOH MCL for 1,4-Dioxane in drinking water is 1 µg/L or 1 parts per billion (ppb).

**** = NYSDOH MCL for PFOS and PFOA in drinking water is 10 ng/L or 1 parts per trillion (ppt).

--- Denotes no applicable water quality standard.

Table 6

Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	Well UP-OS	Well UP-I	Well UP-R	PW-1	PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45	147	15	183	306	47	NA	NA	NA	NA	NA	NA	30	26	36	29	24	26
Sep-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
May-00	10,800	470	17,800	770	382	268	6,640	217	30,800	NA	2,900	2,810	121 B	50 B	1,270	62 B	1,300	1,440	212	NA	NA	NA	NA	NA	NA	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8	< 9.8
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-01	20,200	4,990	20,300	66 B	2,030	829	2,680	32 B	15,400	NA	483	2,790 N	62 B,N	591 N	17,600 N	483 N	2,310 N	12,700 N	368 N	NA	NA	NA	NA	NA	NA	< 10.4	< 10.4	<10.4	113 B	**237**	150 B
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-02	13,600	495	6,050	3,770	195 B	325	1,410	164 B	NA	4,150	6,210	4,440	15 U	1,020	1,470	22 B	487	1,010	< 14.9	NA	NA	NA	NA	NA	NA	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9	< 14.9
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-03	NA	49 B	20,300	1,960	2,740	1,150	6,950	255	NA	1,350	1,110	1,240	NA	149 B	6,820	54 B	968	2,120	36 B	NA	NA	NA	NA	NA	NA	< 15.8	< 15.8	< 15.8	< 15.8	< 15.8	< 15.8
Mar-04	NA	NA	8,880	NA	3,570	NA	1,370	NA	98,800	NA	NA	25,000	NA	48 B	7,040	< 18.2	311	965	286	NA	NA	NA	NA	NA	NA	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2	< 18.2
Jun-05	765	NA	1,190	NA	< 10.4	NA	386	NA	NA	247	NA	1,520	NA	735	184 B	< 10.4	291	173 B	27 B	NA	NA	NA	NA	NA	NA	< 10.4	< 10.4	< 10.4	< 10.4	< 10.4	< 10.4
Sep-06	39,000	NA	4,500	NA	580	NA	2,500	NA	230,000	NA	NA	11,000	NA	140	8,700	1,200	1,000	12,000	73	NA	NA	NA	NA	NA	NA	76	67	63	56	37	14
Oct-07	47,000	NA	12,000	NA	520	NA	9,800	NA	370	NA	NA	7,900	NA	89	10,000	66	4,000	21,000	140	NA	NA	NA	NA	NA	NA	< 50	< 50	< 50	< 50	< 50	< 50
Mar-09	12,000	NA	3,200	NA	870	NA	3,800	NA	65,000	NA	NA	4,000	NA	< 100	8,300	< 100	3,900	13,000	< 100	NA	NA	NA	NA	NA	NA	< 100	< 100	< 100	NA	< 100	< 100
May-10	14,600	NA	3,200	NA	629	NA	2,350	NA	115,000	NA	NA	15,000	NA	< 200	5,970	< 200	2,430	18,300	495	NA	NA	NA	NA	NA	NA	< 200	< 200	< 200	NA	< 105	< 200
Sep-11	20,100	280	2,400	120 J	970	250	1,200	NA	42,500	1,100	19,900	12,800	NA	110 J	<200	<200	3,500	21,900	<200	NA	NA	NA	NA	NA	NA	<200	<200	<200	<200	NA	NA
Nov-12	12,900	NA	1,600	NA	170 J	NA	4,400	NA	42,000	NA	NA	8,700	NA	< 200	230	< 200	520	< 200	< 200	NA	NA	NA	NA	NA	NA	< 200	< 200	< 200	< 200	< 200	NA
Mar-14	17,500	NA	3,100	NA	1,700	NA	3,000	NA	36,300	NA	NA	17,800	NA	ND	180 J	ND	1,800	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Nov-14	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<100 U	1,580	2,590	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	3,220	NA	176	NA	36	NA	304	NA	6,580	NA	NA	723	NA	9.9 J	18	2 J	750	8 J	8 J	608	240	90	NA	NA	NA	< 20	< 20	<20	< 20	< 20	< 20
Jan-17	915	NA	131	NA	13	NA	38	NA	NA	NA	NA	29	NA	17	9 J	11	9 J	15	11	390	12	40	159	120	131	< 3	< 3 J	10	< 3	< 3	4 J
May-18	85	NA	140	NA	83.5	NA	50.2	NA	NA	NA	NA	58.2	NA	7.9 J	9.3 J	7.3 J	19.8	17.3	71	448	92	418	122	1,540	5 J	10 U	10 U	10 U	10 U	10 U	10 U
Jul-19	141	NA	735	NA	1,120.0	NA	18.4	NA	NA	NA	NA	111.0	NA	4.9 J	3.3 U	3.3 U	40.8	7.0 J	25	262	38	35	699	42	23	3 U	4 J	3 U	3 U	3 U	3 U
Oct-20	133	NA	108	NA	975	NA	55 J	NA	NA	NA	NA	1,820	NA	21.6	4 J	16	7.3 J	20.1	9.18 J	359	16	63.6	45.4	96	4.24 J	3.27 U	3.27 U	3.27 U	3.27 U	3.27 U	3.27 U

Notes:

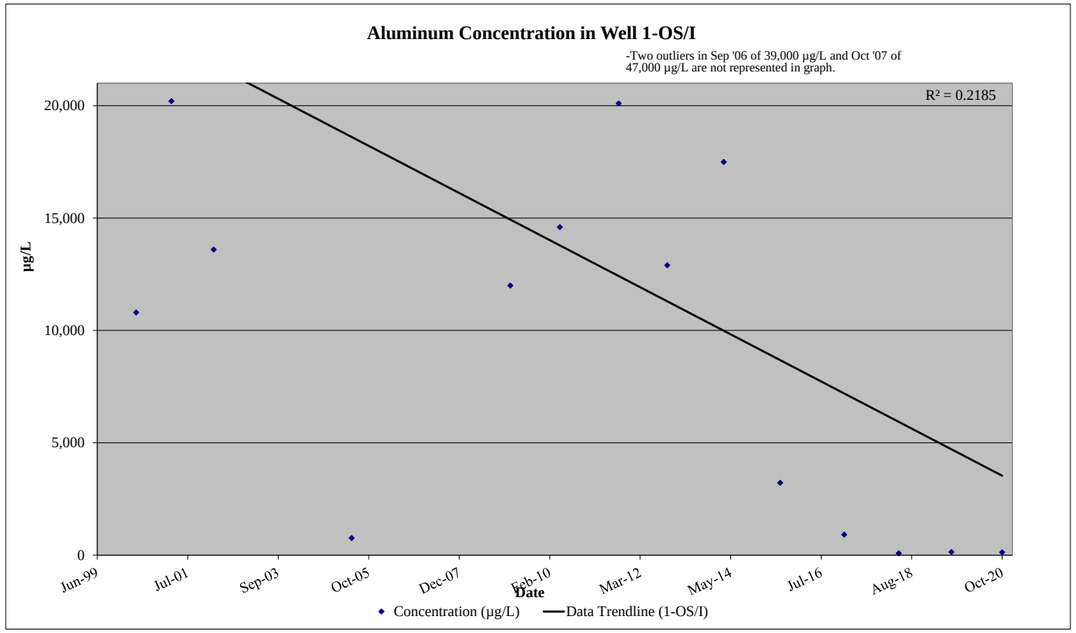
ARAR Standard = None Listed; USEPA Secondary MCL = 50 - 200 µg/L; and, PART 5 MCL = Not Available
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or Secondary MCL/MCL for the private and municipal drinking water wells water quality standard.
NA = Not Analyzed
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

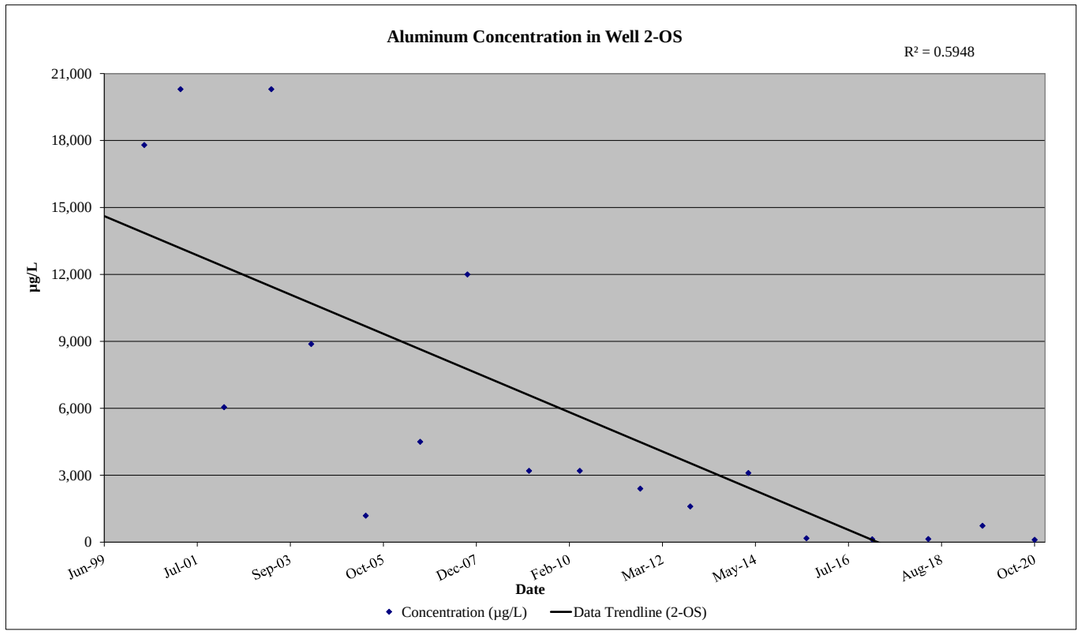
Laboratory Qualifier Definitions

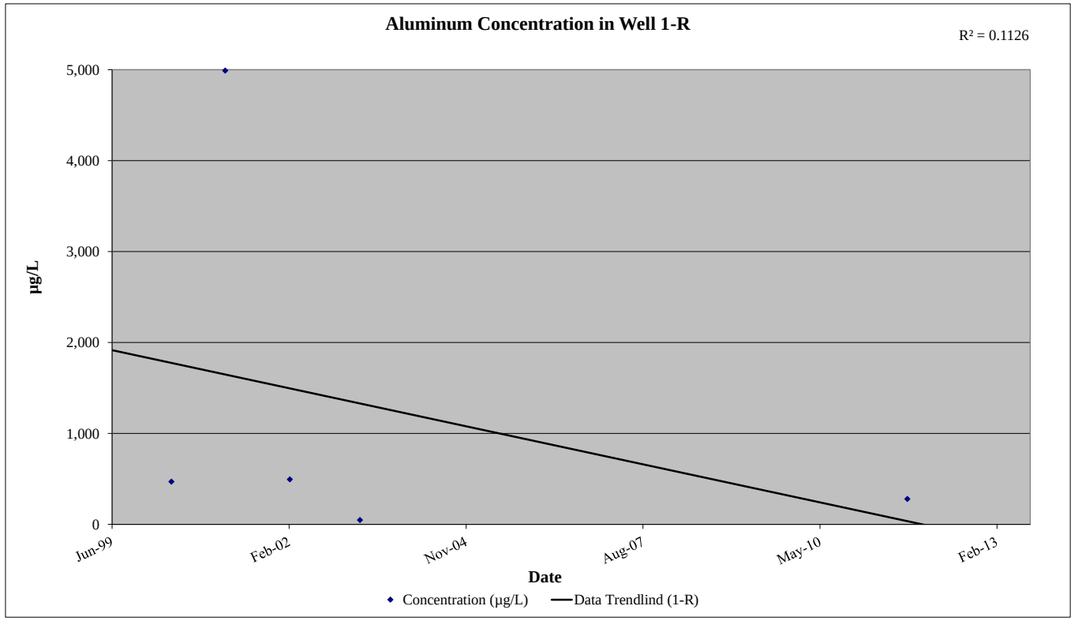
ND or U = Not Detected
B = The analyte was detected above the reporting limit in the associated method blank.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.

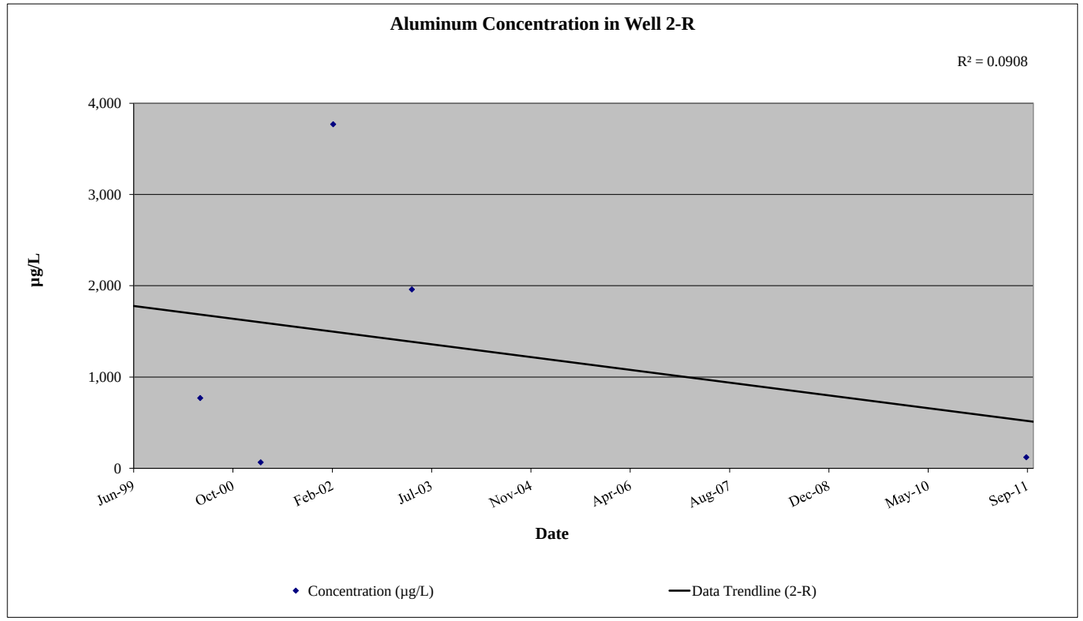
Table 6

Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill

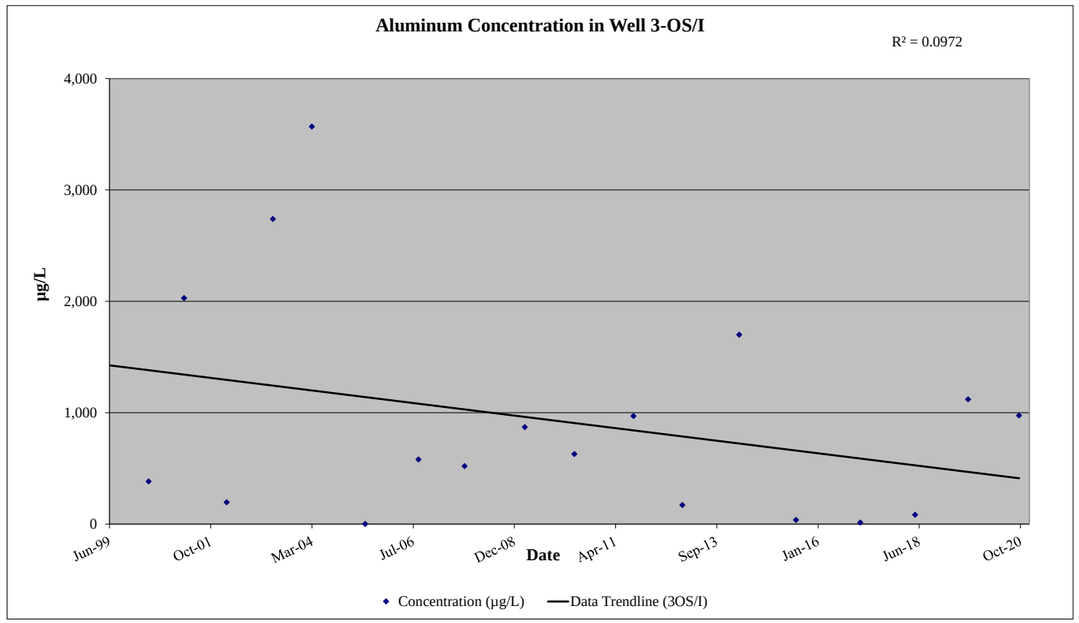


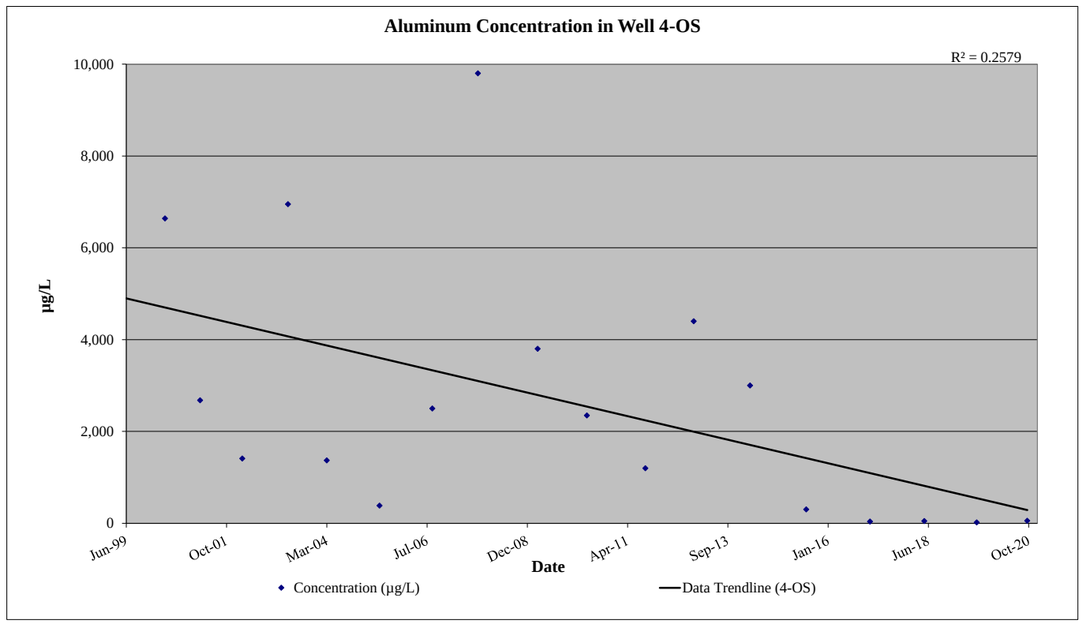


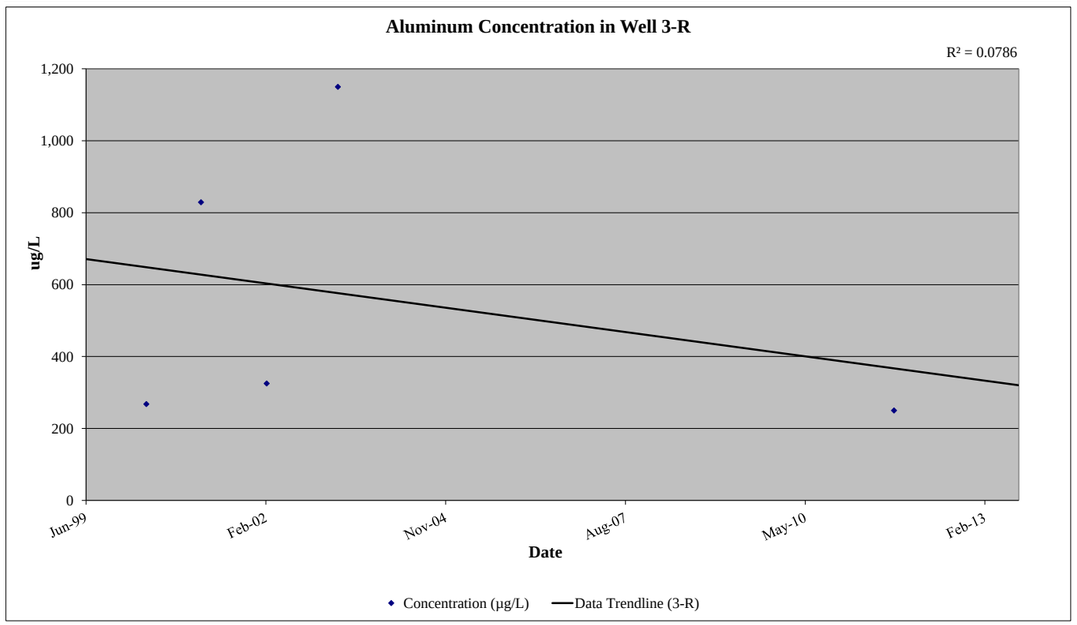




Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill







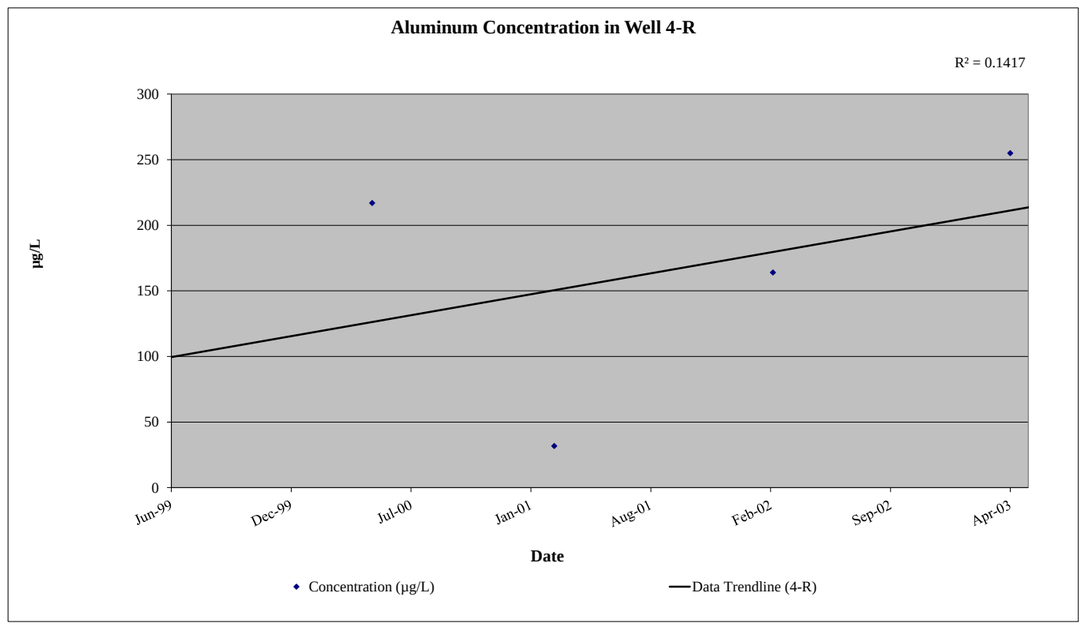
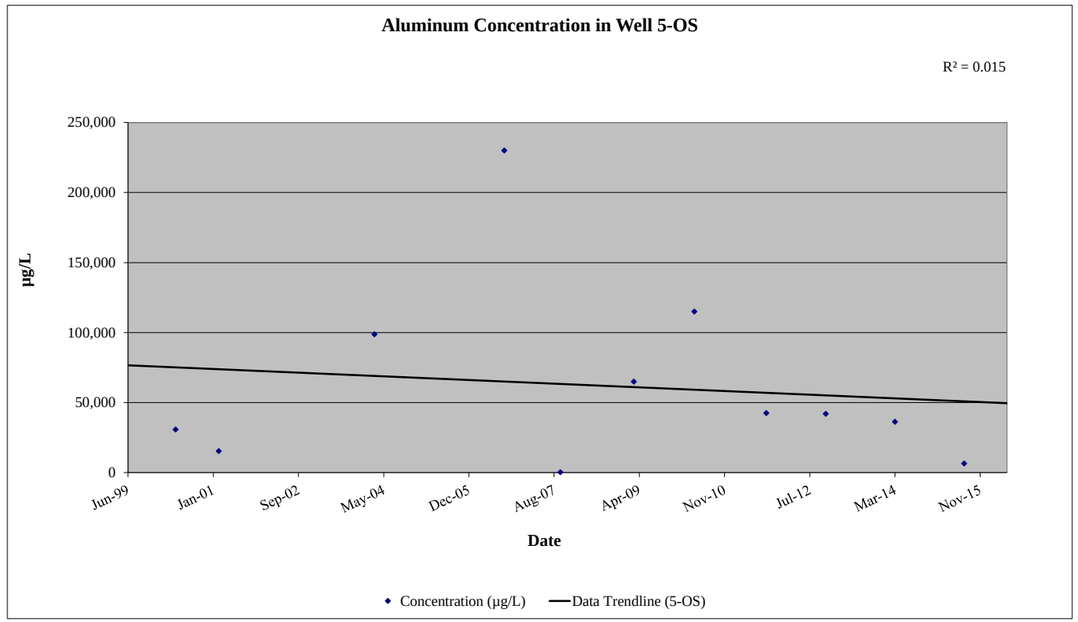
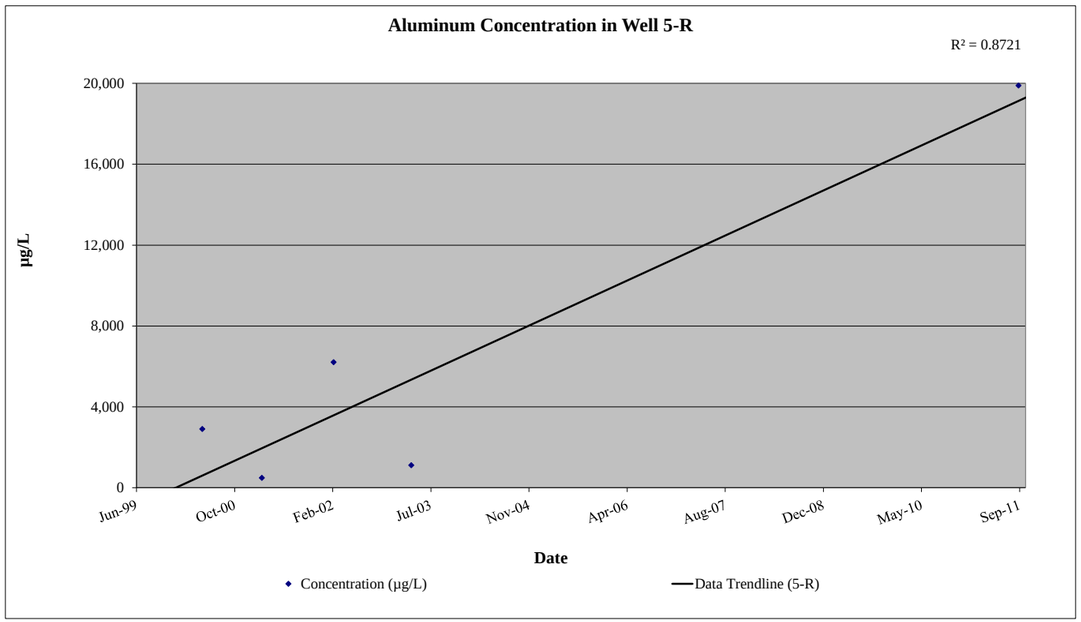
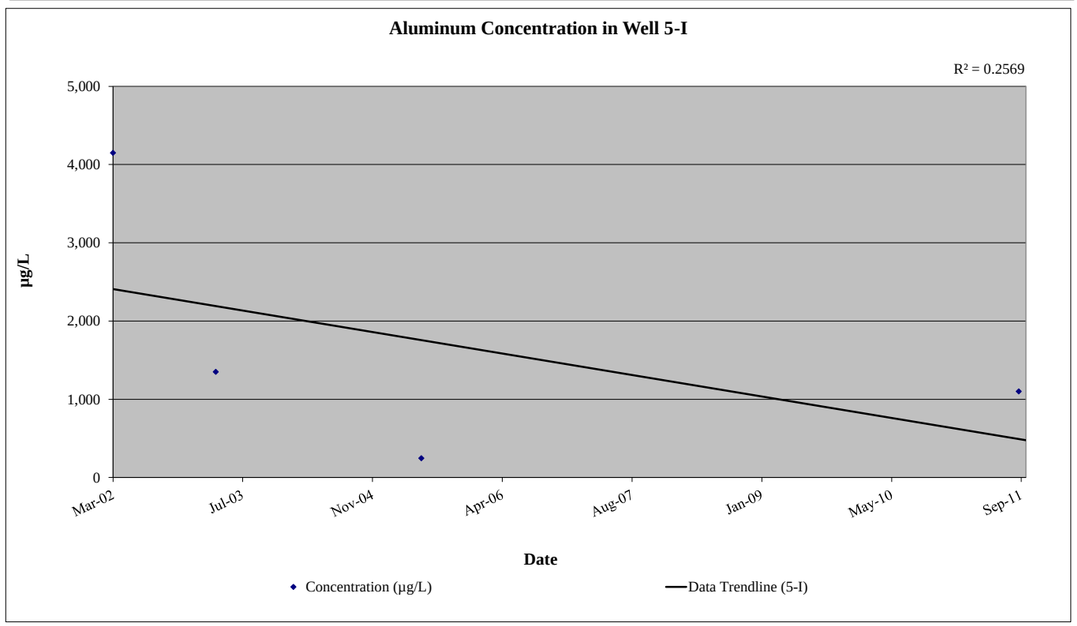


Table 6

Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill







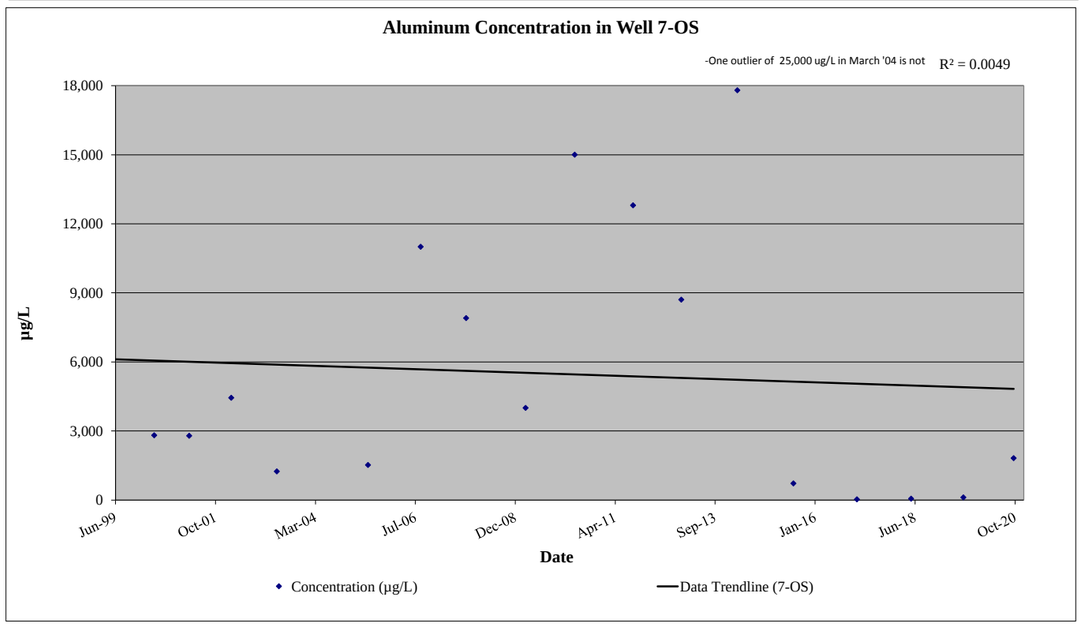
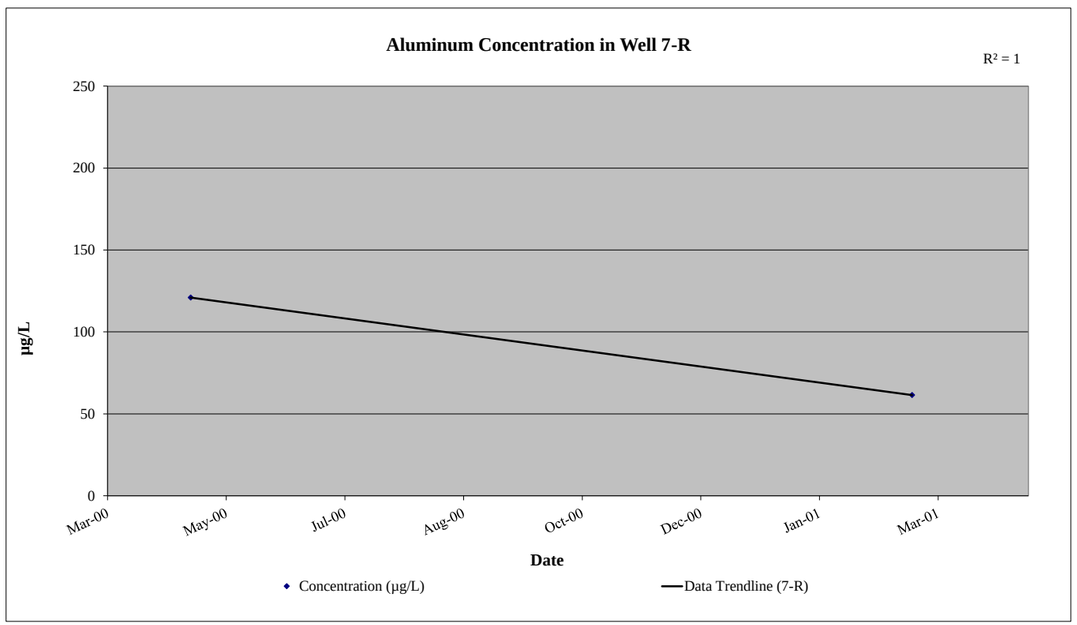
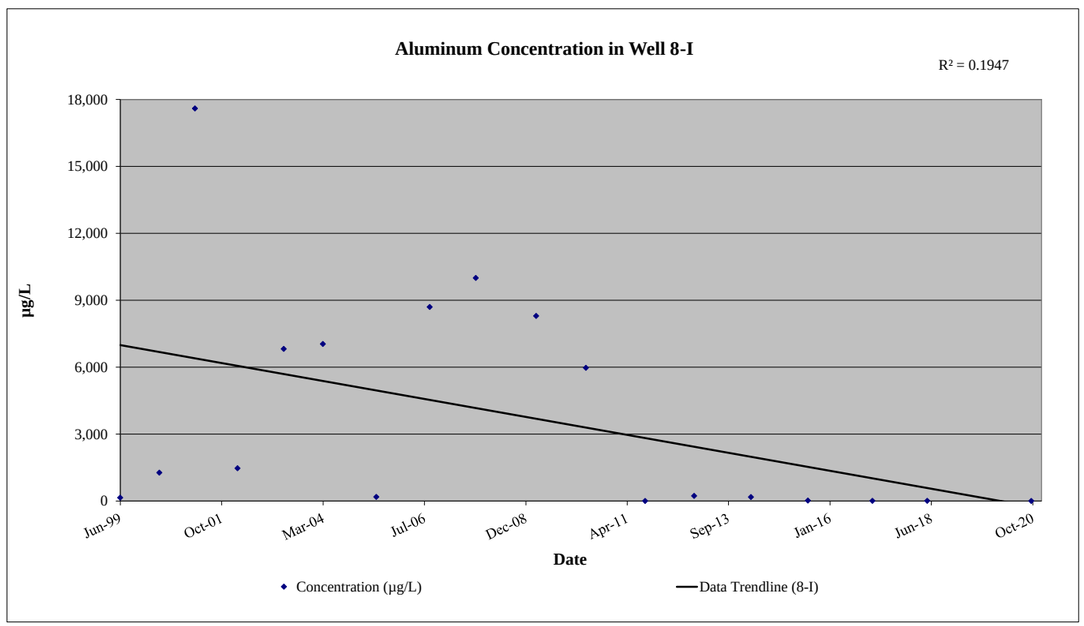
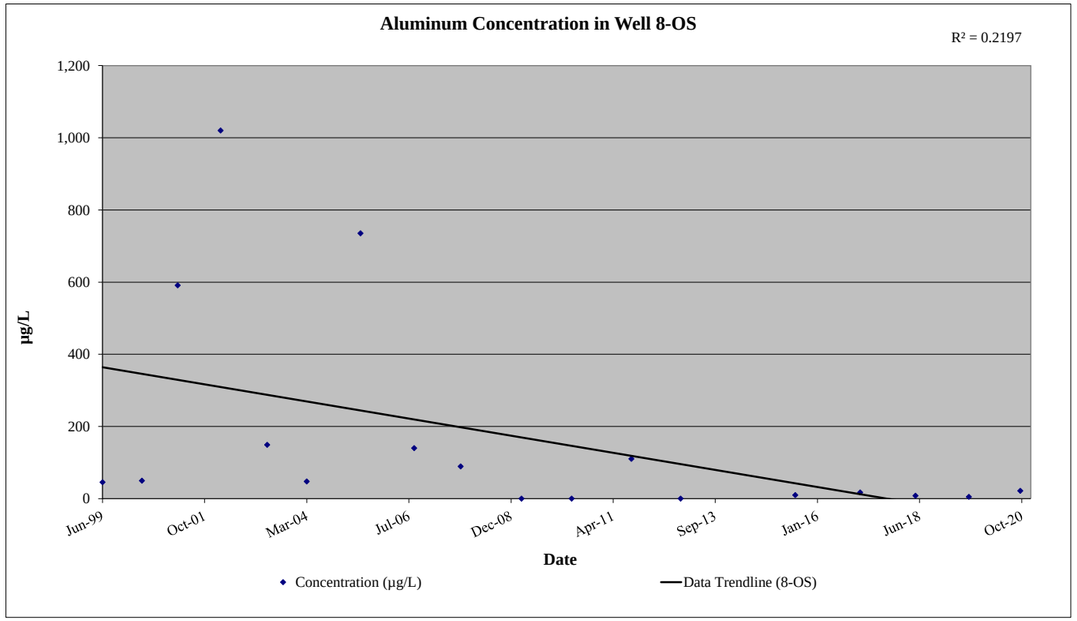


Table 6

Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill







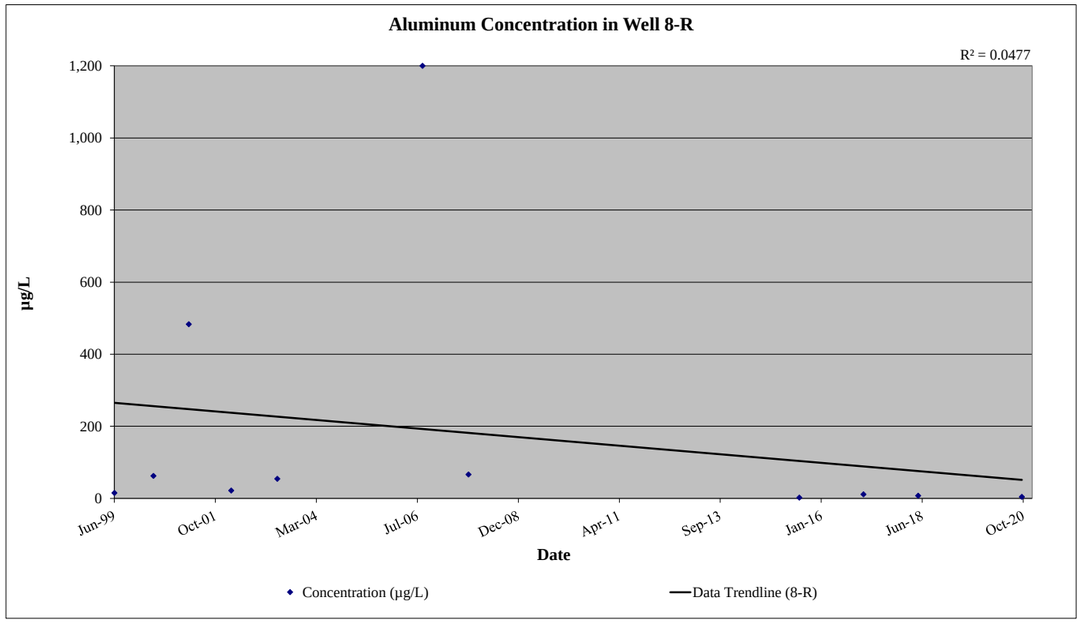
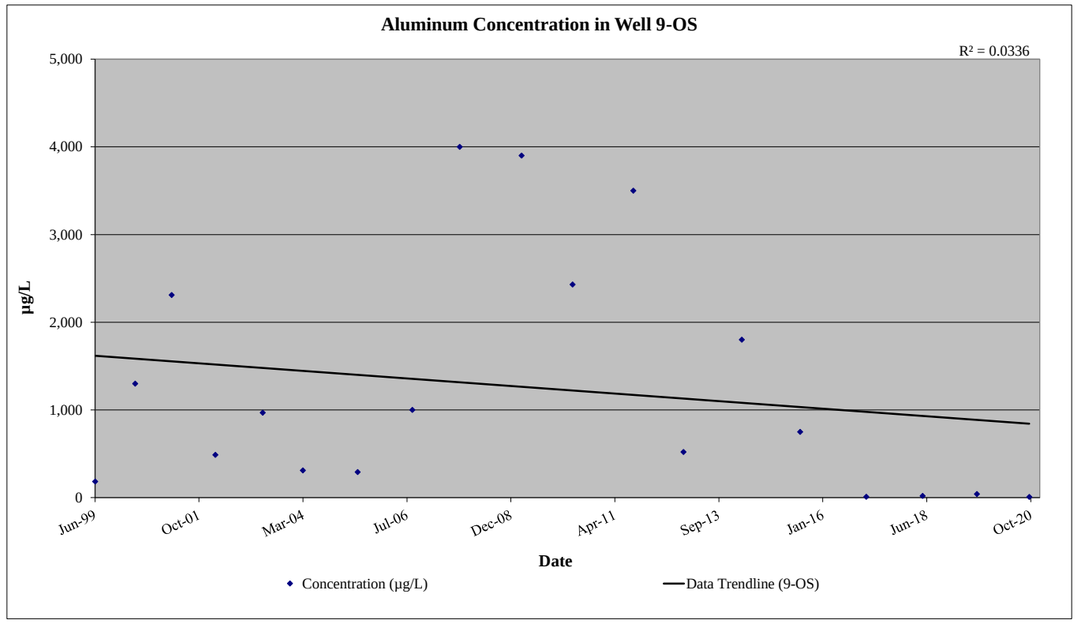
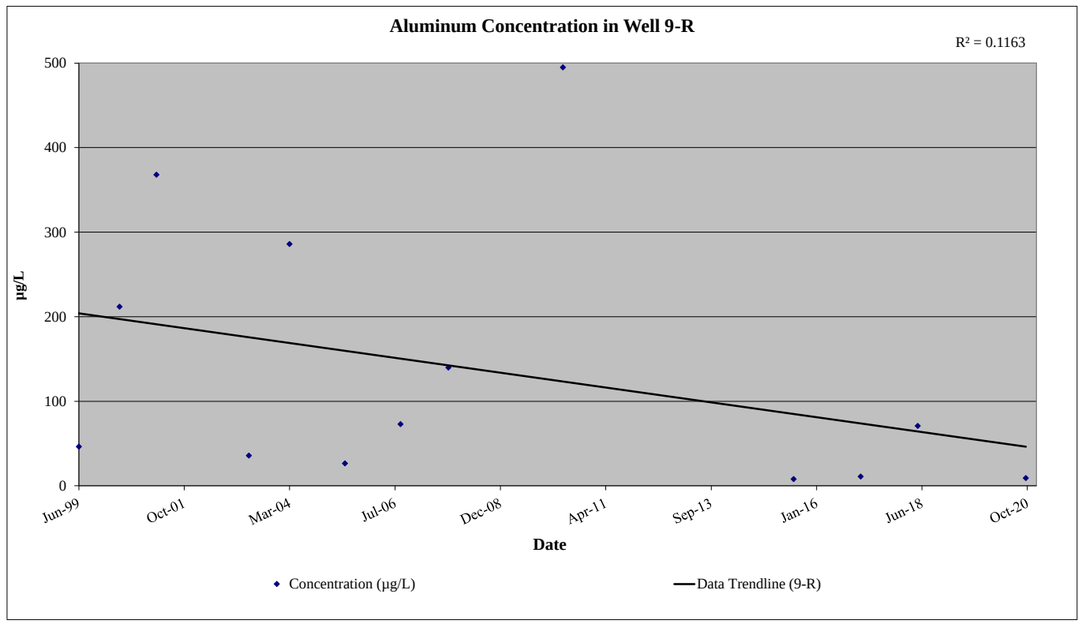


Table 6

Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill





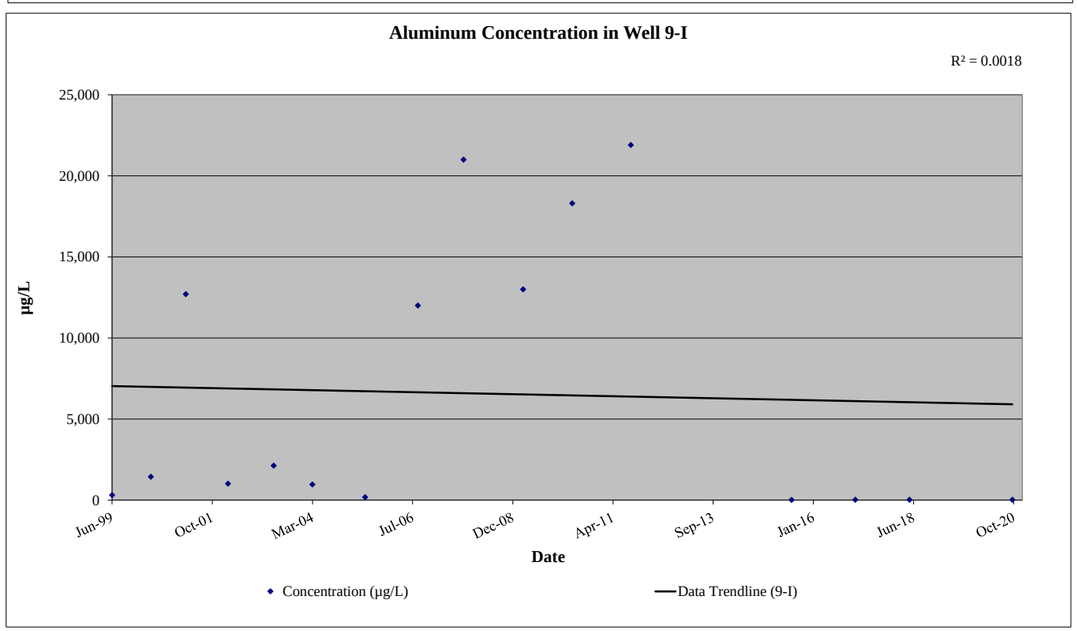


Table 7

Summary of Historical Groundwater Quality Results - Beryllium (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.1	ND	1.4	1.3	1.4	1.3	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Sep-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
May-00	0.31 B	< 0.1	0.83 B	< 0.1	< 0.1	< 0.1	0.36 B	< 0.1	1.5 B	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA	NA	NA	< 0.1	< 0.1	0.39 B	< 0.1	< 0.1	< 0.1
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-01	1.1 B	0.26 B	0.88 B	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.97 B	NA	0.52 B	0.24 B	< 0.2	0.32 B	1.1 B	< 0.2	0.42 B	1.2 B	0.87 B	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-02	1.2 B	< 0.35	0.44 B	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	NA	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	NA	NA	NA	NA	NA	NA	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35	< 0.35
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-03	NA	< 0.2	1 B	< 0.2	< 0.2	< 0.2	0.38 B	< 0.2	NA	< 0.2	< 0.2	< 0.2	NA	< 0.2	0.41 B	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA	NA	NA	< 0.2	0.25 B	< 0.2	< 0.2	< 0.2	< 0.2
Mar-04	NA	NA	0.5 B	NA	< 0.3	NA	< 0.4	NA	**4.9**	NA	NA	< 0.3	NA	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	NA	NA	NA	NA	NA	NA	0.38 B	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Jun-05	< 0.4	NA	< 0.4	NA	< 0.4	NA	< 0.4	NA	NA	< 0.4	NA	< 0.4	NA	0.51 B	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	NA	NA	NA	NA	NA	NA	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Sep-06	2.2 J	NA	0.44 J	NA	0.23 J	NA	0.43 J	NA	**13**	NA	NA	0.73 J	NA	0.16 J	0.66 J	0.28 J	0.14 J	0.77 J	< 1	NA	NA	NA	NA	NA	NA	< 3	0.12 J	0.14 J	< 3	< 3	< 3
Oct-07	2.6 J	NA	0.66 J	NA	0.1 J	NA	0.6 J	NA	< 3	NA	NA	0.51 J	NA	< 3	0.67 J	< 3	0.34 J	1.2 J	0.1 J	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	< 3	< 3	< 3
Mar-09	0.61 J	NA	< 3	NA	< 3	NA	< 3	NA	**3.2**	NA	NA	0.24 J	NA	< 3	0.46 J	< 3	0.25 J	0.71 J	< 3	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	NA	< 3	< 3
May-10	0.7 J	NA	0.2 J	NA	< 2	NA	0.2 J	NA	**5.5**	NA	NA	0.7 J	NA	< 2	0.4 J	< 2	< 2	0.9 J	< 2	NA	NA	NA	NA	NA	NA	< 2	< 2	< 2	NA	< 2	< 2
Sep-11	0.94 J	< 2	< 2	< 2	< 2	< 2	< 2	NA	2.4	< 2	1.4 J	0.6 J	NA	< 2	< 2	< 2	< 2	1.8 J	< 2	NA	NA	NA	NA	NA	NA	< 2	< 2	< 2	< 2	NA	NA
Nov-12	0.67 J	NA	<2	NA	< 2	NA	<2	NA	2.1	NA	NA	0.47 J	NA	< 2	< 2	< 2	< 2	< 2	< 2	NA	NA	NA	NA	NA	NA	< 2	< 2	< 2	< 2	< 2	NA
Mar-14	0.48 J	NA	<2	NA	<2		<2	NA	1.9 J			0.56 J	NA	< 2	< 2	< 2	< 2	< 2	<2	NA	NA	NA	NA	NA	NA	< 2	< 2	< 2	< 2	< 2	< 2
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	0.21 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	<0.21 J	NA	<0.2	NA	<0.2	NA	<0.2	NA	1.1	NA	NA	<0.2	NA	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	NA	NA	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Jan-17	0.1 U	NA	0.1 U	NA	0.1 U	NA	0.1 U	NA	NA	NA	NA	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 J	0.1 U	0.1 U	0.1 U	NA	0.1 U	NA	0.1 U	NA	0.1 U	NA	0.1 U
May-18	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 J	0.5 U	0.5 U	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U
Jul-19	0.1 U	NA	0.1 U	NA	0.1 U	NA	0.1 U	NA	NA	NA	NA	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.12 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Oct-20	1 U	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA	NA	1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.14 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

Notes:
ARAR Standard = 3 µg/L; USEPA MCL = 4 µg/L; and, PART 5 MCL = 4 µg/L
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.
NA = Not Analyzed
< = The compound was analyzed for but not detected at the listed laboratory detection limit.

Laboratory Qualifier Definitions
ND or U = Not Detected
B = The analyte was detected above the reporting limit in the associated method blank.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

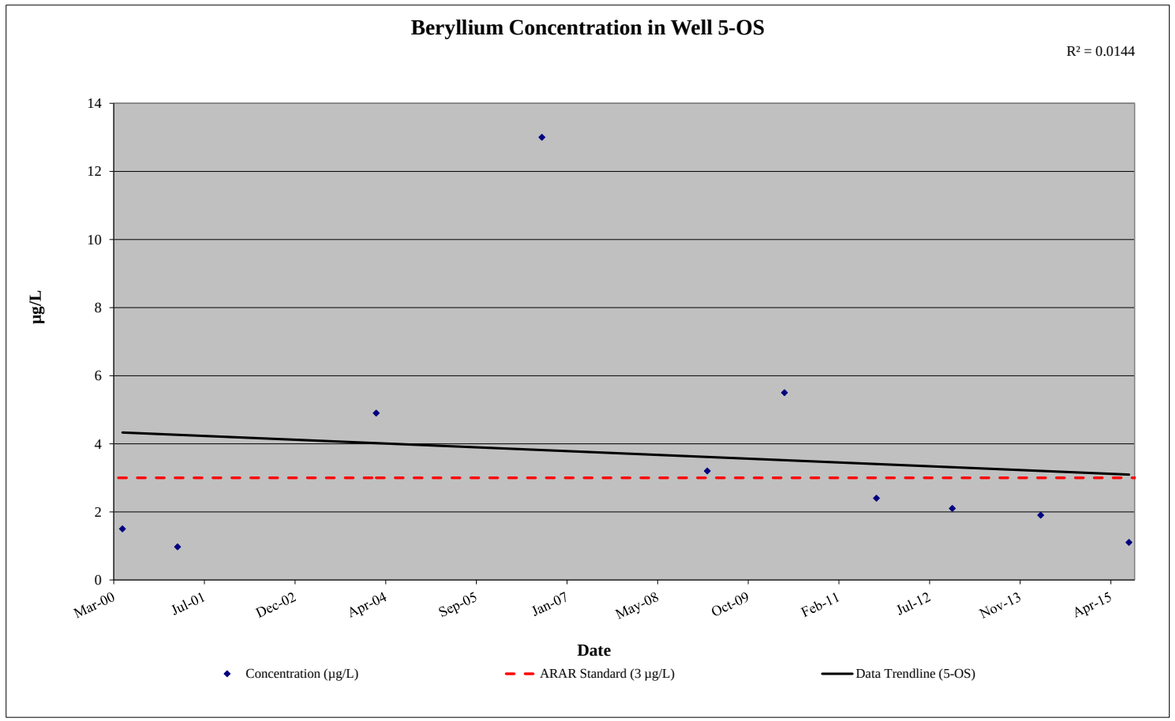


Table 8

Summary of Historical Groundwater Quality Results - Cadmium (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	1.3	3	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Sep-99	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	3.8	**24.2**	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	0.92 B	0.61 B	2.4	< 0.4	< 0.4	< 0.4	0.45 B	< 0.4	1.3 B	NA	1.4 B	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	**9.4**	NA	NA	NA	NA	NA	NA	< 0.4	< 0.4	0.61 B	< 0.4	< 0.4	< 0.4
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.2	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	NA	NA	NA	NA	NA	NA	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1
Dec-00	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	3.4 B	NA	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1 NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 3.1	< 3.1	< 3.1	< 3.1	< 3.1
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.81 B	< 0.3	0.88 B	NA	NA	NA	NA	NA	NA	< 3	NA	NA	NA	NA	NA
Mar-01	1.2 B	< 0.3	1.3 B	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.31 B	NA	0.42 B	< 0.3	< 0.3	0.4 B	1.2 B	0.35 B	0.42 B	0.9 B	1.7 B	NA	NA	NA	NA	NA	NA	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.91 B	0.68 B	< 0.3	< 0.3	< 0.3	0.37 B	NA	NA	NA	NA	NA	NA	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Oct-01	< 0.3	< 0.3	1.1 B	0.36 B	< 0.3	< 0.3	< 0.3	< 0.3	NA	0.84 B	< 0.3	0.37 B	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	NA	NA	NA	NA	NA	NA	< 0.3	< 0.3	NA	NA	NA	NA
Mar-02	< 0.26	< 0.26	< 0.26	0.66 B	< 0.26	< 0.26	< 0.26	< 0.26	NA	< 0.26	0.45 B	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	NA	NA	NA	NA	NA	NA	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26	< 0.26
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	NA	NA	NA	NA	NA	NA	< 0.48	< 0.48	< 0.48	2.4 B	< 0.48	< 0.48
Oct-02	< 0.48	1.5 B	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	NA	< 0.48	< 0.48	< 0.48	NA	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	NA	NA	NA	NA	NA	NA	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48	< 0.48
Apr-03	NA	< 0.3	1.7 B	< 0.3	1.2 B	< 0.3	0.33 B	< 0.3	NA	< 0.3	< 0.3	< 0.3	NA	< 0.3	0.55 B	< 0.3	< 0.3	< 0.3	< 0.3	NA	NA	NA	NA	NA	NA	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Mar-04	NA	NA	< 0.4	NA	0.58	NA	< 0.4	NA	< 0.4	NA	NA	2.1 B	NA	0.42 B	< 0.4	< 0.4	< 0.4	< 0.4	0.9 B	NA	NA	NA	NA	NA	NA	0.88 B	< 0.4	< 0.4	0.52 B	< 0.4	< 0.4
Jun-05	< 0.8	NA	< 0.8	NA	1.6 B	NA	< 0.8	NA	NA	< 0.8	NA	< 0.8 N	NA	< 0.8 N	< 0.8 N	< 0.8 N	< 0.8 N	< 0.8 N	< 0.8 N	NA	NA	NA	NA	NA	NA	< 0.8 N	< 0.8 N	< 0.8 N	< 0.8 N	< 0.8 N	< 0.8 N
Sep-06	4.3	NA	1.6	NA	3.2	NA	2.2	NA	**11**	NA	NA	1	NA	0.92 J	1.5	1.2	0.67 J	0.73 J	0.53 J	NA	NA	NA	NA	NA	NA	0.53 J	0.62 J	0.59 J	< 1	< 1	< 1
Oct-07	< 1	NA	< 1	NA	< 1	NA	< 1	NA	< 1	NA	NA	< 1	NA	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1	< 1	< 1
Mar-09	< 5	NA	< 5	NA	< 5	NA	< 5	NA	< 5	NA	NA	< 5	NA	< 5	< 5	< 5	< 5	< 5	< 5	NA	NA	NA	NA	NA	NA	< 5	< 5	< 5	NA	< 5	< 5
May-10	< 1	NA	< 1	NA	< 1	NA	< 1	NA	< 5 D02	NA	NA	< 1	NA	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	NA	< 1	< 1
Sep-11	0.67 J	< 1	< 1	< 1	0.47 J	0.61 J	< 1	NA	0.42 J	< 1	2.2	< 1	NA	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1	NA	NA
Nov-12	<1	NA	< 1	NA	<1	NA	< 1	NA	0.69	NA	NA	< 1	NA	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	NA	NA	NA	NA	< 1	< 1	< 1	< 1	< 1	NA
Mar-14	0.66 J	NA	< 1	NA	< 1	NA	< 1	NA	< 1	NA	NA	< 1	NA	< 1	< 1	< 1	< 1	< 1	< 1	NA	NA	NA	NA	NA	NA	< 1	<1	<1	<1	<1	<1
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2	< 2	< 2	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	0.29	NA	0.1 J	NA	0.1 U	NA	0.1 U	NA	0.4	NA	NA	0.1 J	NA	0.1 U	0.1 U	0.1 U	0.4	0.1 U	0.1 J	0.1 J	0.1 U	0.1 U	NA	NA	NA	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Jan-17	0.3	NA	0.1 U	NA	0.1 U	NA	0.1 U	NA	NA	NA	NA	0.1 U	NA	0.1 U	0.1 U	0.1 J	0.18 J	0.18 J	0.6	0.1 J	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
May-18	0.2 U	NA	0.2 U	NA	0.12 J	NA	0.2 U	NA	NA	NA	NA	0.2 U	NA	0.2 U	0.2 U	0.22 J	0.2 U	0.2 U	0.3	0.48	0.12 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Jul-19	0.14 J	NA	0.05 U	NA	0.17 J	NA	0.05 U	NA	NA	NA	NA	0.05 U	NA	0.08 J	0.05 U	0.22 J	0.32	0.05 U	0.71	0.05 U	0.05 U	0.17 J	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Oct-20	1 U	NA	1 U	NA	1 U	NA	1 U	NA	NA	NA	NA	1 U	NA	0.05 U	0.05 U	0.29	0.05 U	0.05 U	0.45	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Notes:
ARAR Standard = 5 µg/L; USEPA MCL = 5 µg/L; and, Part 5 MCL = 5 µg/L
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.
NA = Not Analyzed
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions
ND or U = Not Detected
B = The analyte was detected above the reporting limit in the associated method blank.
D02 = Dilution required due to sample matrix effects.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.

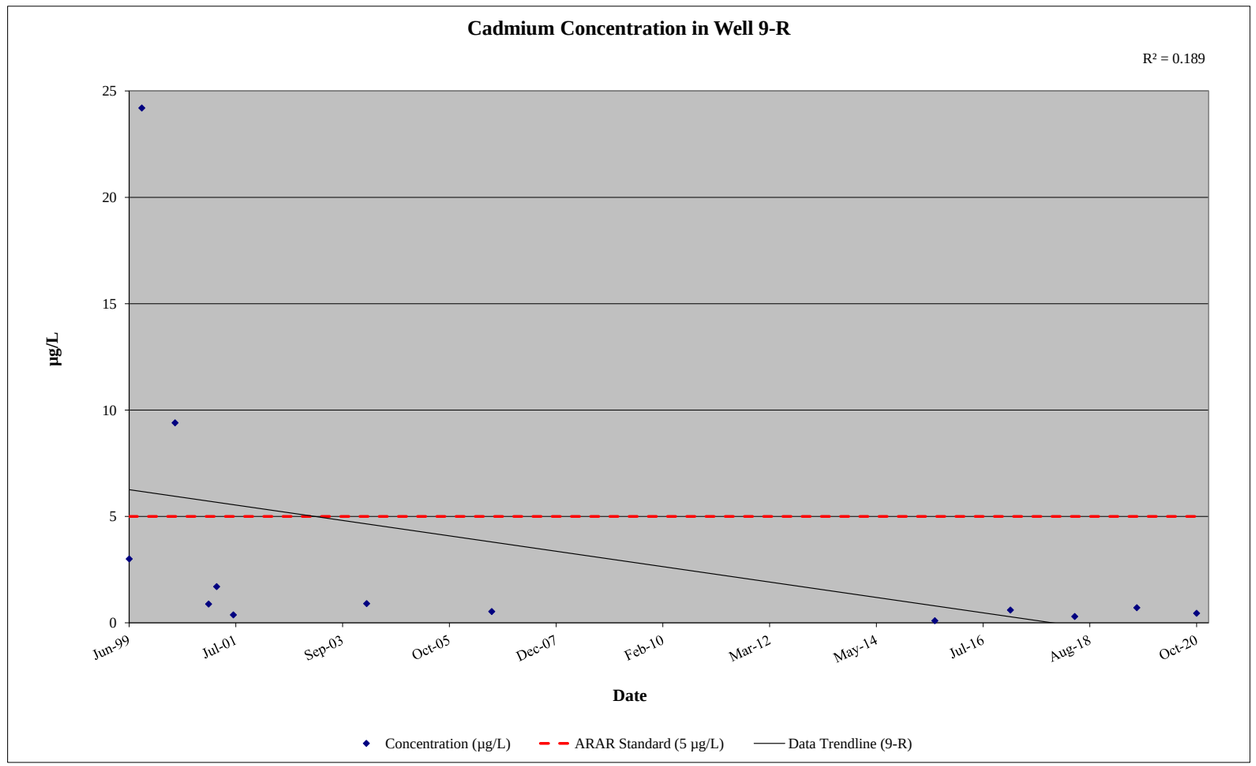


Table 9

Summary of Historical Groundwater Quality Results - Copper (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS/I	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12	37.2	12.7	9.5	10	12.8	NA	NA	NA	NA	NA	NA	97.2	29.1	25.8	32.3	25.8	29.1
Sep-99	104	10.6	23.4	ND	7.8	23.8	79.8	17.3	NA	6	10.1 B	34.5	5.8	7.2	18.2	23.5	ND	8.7	19.1	NA	NA	NA	NA	NA	NA	39.7	7.5	NA	NA	NA	NA
May-00	68	6.8 B	56.9	6.3 B	13.5 B	5.2 B	19.1 B	< 2	53.9	NA	9.2 B	10.8 B	4.4 B	2.1 B	3.4 B	5.4 B	< 2	3.1 B	3.9 B	NA	NA	NA	NA	NA	NA	99.1	18.6 B	3.1 B	5.6 B	3.5 B	4 B
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.1 B	18.5 B	22.9 B	< 2.1	3.4 B	5 B	NA	NA	NA	NA	NA	NA	173	39.6	3.2 B	4.9 B	< 2.1	5.1 B
Dec-00	49.3	5 B	45.1	15.4 B	10 B	8.2 B	15.8 B	3.5 B	142	NA	6.6 B	24.5 B	4.9 B	11.7 B	30.4	26.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.4 B	10.3 B	7.1 B	7 B	17.8 B
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.3 B	3.4 B	2.7 B	NA	NA	NA	NA	NA	NA	52.7	NA	NA	NA	NA	NA
Mar-01	75	36.9	57.3	< 1.6	10.2 B	4.6 B	8.3 B	< 1.6	26.2	NA	3.2 B	8 B	< 1.6	5.3 B	53.8	29.9	4.3 B	29.5	3.1 B	NA	NA	NA	NA	NA	NA	59.1	7.2 B	1.7 B	7 B	4.2 B	2.8 B
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.3 B	20.3 B	9.5 B	2.4 B	3.4 B	4.3 B	NA	NA	NA	NA	NA	NA	53.6	21.3 B	3.9 B	4.1 B	2.7 B	4 B
Oct-01	22.2 B	15.4 B	39	1.9 B	8 B	2.4 B	5.2 B	3.4 B	NA	21.8 B	5.6 B	25.9	7.1 B	5.9 B	< 1.6	4.6 B	8.9 B	4 B	< 1.6	NA	NA	NA	NA	NA	NA	64.9	80.6	NA	NA	NA	NA
Mar-02	47.4	17.1 B	16.5 B	19.2 B	5 B	< 3	< 3	< 3	NA	5 B	23.9 B	7.8 B	< 3	< 3	< 3	< 3	< 3	< 3	< 3	NA	NA	NA	NA	NA	NA	57.6	17.8 B	< 3	3.6 B	6.8 B	8.2 B
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 6.9	15.8 B	8.1 B	< 6.9	< 6.9	< 6.9	NA	NA	NA	NA	NA	NA	121	13 B	< 6.9	< 6.9	< 6.9	< 6.9
Oct-02	86.3	20.4 B	83.4	< 6.9	31.6	8.8 B	45.4	< 6.9	NA	< 6.9	< 6.9	39.5	NA	12.9 B	14.1 B	22 B	< 6.9	< 6.9	< 6.9	NA	NA	NA	NA	NA	NA	50.6	18.4 B	< 6.9	< 6.9	7.9 B	< 6.9
Apr-03	NA	3.6 B	55.3	11.3 B	59.9	5.3 B	17.6 B	3.1 B	NA	4.2 B	5.6 B	4.4 B	NA	3 B	18.6 B	4.6 B	< 2.8	5.3 B	< 2.8	NA	NA	NA	NA	NA	NA	58.7	13.9 B	6.4 B	4.4 B	4 B	3.6 B
Mar-04	NA	NA	25.4	NA	13.7 B	NA	7.4 B	NA	183	NA	NA	51.6	NA	1.7 B	14.2 B	1.8 B	< 1.6	2.8 B	2.2 B	NA	NA	NA	NA	NA	NA	59.5	17.4 B	10.6 B	9.8 B	5.6 B	5.4 B
Jun-05	25.9	NA	15.9 B	NA	51.8	NA	4.2 B	NA	NA	2.9 B	NA	5.2 B	NA	32.1	< 1.2	3 B	< 1.2	< 1.2	< 1.2	NA	NA	NA	NA	NA	NA	83.4	197	3.9 B	5.4 B	3 B	3.9 B
Sep-06	130	NA	15	NA	69	NA	10	NA	**500**	NA	NA	28	NA	2 J	23	84	3.6 J	27	< 10	NA	NA	NA	NA	NA	NA	69	50	7.6 J	7 J	6.1 J	6.8 J
Oct-07	140	NA	35	NA	27	NA	23	NA	< 10	NA	NA	18	NA	< 10	29	2.9 J	14	44	< 10	NA	NA	NA	NA	NA	NA	60	200	8 J	12	4.4 J	4.3 J
Mar-09	33	NA	21	NA	44	NA	11	NA	110	NA	NA	10	NA	11	27	5 J	16	27	< 10	NA	NA	NA	NA	NA	NA	100	61	3.9 J	NA	5.4 J	6.3 J
May-10	57.6	NA	36	NA	21.1	NA	7.4 J	NA	**202**	NA	NA	30.9	NA	1.7 J	12.4	< 10 J	7.2 J	33 B	< 10	NA	NA	NA	NA	NA	NA	117	53.4	19.3	NA	11.2	8.5 J
Sep-11	160	15	34	1.8 J	200	34	4.2 J	NA	72	2.9 J	53	32	NA	9.2 J	< 10	< 10	6.7 J	48	< 10	NA	NA	NA	NA	NA	NA	87	16	4.6 J	3.9 J	NA	NA
Nov-12	48	NA	11	NA	55	NA	14	NA	85	NA	NA	27	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	250	26	3.1 J	5.4 J	4.1	NA
Mar-14	90	NA	34	NA	28	NA	12	NA	66	NA	NA	39	NA	2.6 J	2.4 J	4 J	3.8 J	ND	ND	NA	NA	NA	NA	NA	NA	160	63	7.9 J	8 J	11	8.1 J
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5	< 5	**331**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	95.26	NA	5.2	NA	4.7	NA	3.4	NA	37.6	NA	NA	20	NA	2.8	<0.3	0.8 J	4	<0.3	0.3 J	12	1.5	1.2	NA	NA	NA	111	24	8.32	7.52	2.5	7.66
Jan-17	42.9	NA	11.9	NA	5.4	NA	0.9 J	NA	NA	NA	NA	2.3	NA	3.8	0.6 J	2.1	0.5 J	0.8 J	1.7	1.5	0.96 J	2.9	13.4	3.8	3.1	91.8	55.6	9.8	4.9	5.3	7
May-18	4.60	NA	11.32	NA	32.48	NA	0.88 J	NA	NA	NA	NA	1.01	NA	1 U	1 U	5.1	1 U	0.58 J	1.81	1.23	0.93 J	4.61	0.51 J	20.28	1 U	**320.20**	52.88	2.79	4.63	5.10	6.01
Jul-19	4.55	NA	3.15	NA	59	NA	0.85 J	NA	NA	NA	NA	1.43	NA	1.34	0.38 U	1.66	7.54	0.84 J	2.42	1.06	1.02	2.67	7.66	0.97 J	0.75 J	**60.62**	23.32	3.39	3.13	4.30	2.62
Oct-20	3 J	NA	20	NA	18	NA	2 U	NA	NA	NA	NA	12	NA	1.61	0.38 U	4.02	0.4 J	0.81 J	1.91	0.99 J	0.38 U	1.54	0.57 J	1.46	0.38 U	31.85	8.51	3.39	3.3	20.5	6.73

Notes:

ARAR Standard = 200 µg/L; MCL Guidance = 1,000 µg/L*; and, Part 5 MCL = Not Available
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.
* USEPA National Secondary Drinking Water Regulation
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.
NA = Not Analyzed
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions
ND or U = Not Detected
B = The analyte was detected above the reporting limit in the associated method blank.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

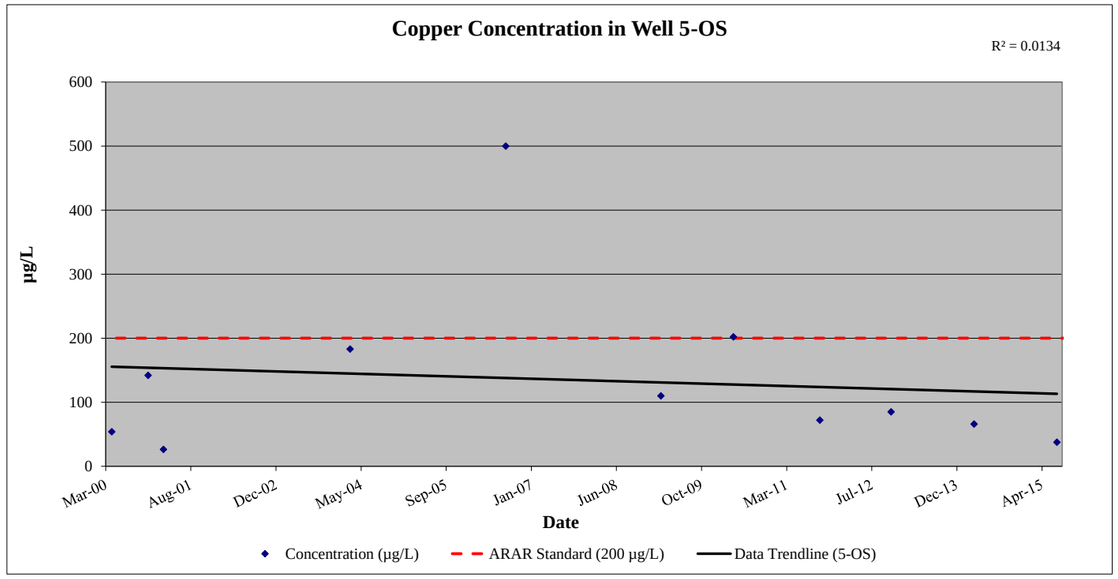


Table 10

Summary of Historical Groundwater Quality Results - Antimony (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well-10R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Sep-99	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	**29.1** B	< 3.4	< 3.4	< 3.4	**4.8** B	< 3.4	< 3.4	< 3.4	< 3.4	NA	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	NA	NA	NA	NA	NA	NA	NA	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 11.0	< 5.5	< 5.5	< 5.5	< 5.5	NA	NA	NA	NA	NA	NA	NA	< 5.5	< 5.5	< 5.5	< 5.5	< 5.5	< 5.5
Dec-00	< 5.5	< 5.5	< 5.5 N	< 5.5	**8.2** B, N	< 5.5 N	< 5.5 N	< 5.5 N	< 5.5 N	NA	< 5.5 N	< 5.5 N	< 5.5 N	< 5.5 N	< 5.5 N	< 5.5 N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.5 N	< 5.5 N	< 5.5 N	< 5.5 N	< 5.5 N
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.7	< 4.7	NA	NA	NA	NA	NA	NA	NA	< 4.7	NA	NA	NA	NA	NA
Mar-01	< 4.7 Site V	< 4.7	< 4.7	< 4.7	**9.5** B, N	< 4.7	< 4.7	< 4.7	< 4.7	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	NA	NA	NA	NA	NA	NA	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	NA	NA	NA	NA	NA	NA	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7
Oct-01	< 4.7	< 4.7	< 4.7	< 4.7	**9.4** B	< 4.7	< 4.7	< 4.7	NA	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	NA	NA	NA	NA	NA	NA	NA	< 4.7	< 4.7	NA	NA	NA	NA
Mar-02	**12.7** B	**10.5** B	**14** B	**13.8** B	**15.1** B	**11.9** B	< 7.4	**9.7** B	NA	< 7.4	< 7.4	**13.2** B	**13** B	< 7.4	**10.9** B	**12** B	< 7.4	< 7.4	NA	NA	NA	NA	NA	NA	NA	< 7.4	**9.3** B	**8** B	**11.4** B	< 7.4	< 7.4
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	NA	NA	NA	NA	NA	NA	NA	< 5.3	< 5.3	**8.1** B	< 5.3	< 5.3	< 5.3
Oct-02	**15** B,N	**5.6** B, N	**33** B, N	< 5.3 N	**25.4** B, N	**5.5** B, N	< 5.3 N	< 5.3 N	NA	< 5.3 N	< 5.3 N	< 5.3 N	NA	< 5.3 N	< 5.3 N	**6.3** B, N	< 5.3 N	< 5.3 N	NA	NA	NA	NA	NA	NA	NA	< 5.3 N	< 5.3 N	**17.2** B, N	**5.5** B, N	< 5.3 N	< 5.3 N
Apr-03	NA	< 5	< 5	< 5	**77.6**	< 5	< 5	< 5	NA	< 5	< 5	< 5	NA	< 5	< 5	< 5	< 5	< 5	NA	NA	NA	NA	NA	NA	NA	< 5	**9.3** B	< 5	< 5	< 5	< 5
Mar-04	NA	NA	< 7.1	NA	< 5.8	NA	< 7.1	NA	< 7.1	NA	NA	< 5.8	NA	< 5.8	< 5.8	< 5.8	< 5.8	< 5.8	NA	NA	NA	NA	NA	NA	NA	< 5.8	< 5.8	< 5.8	< 5.8	< 5.8	< 5.8
Jun-05	<0.12	NA	< 0.12	NA	< 0.12	NA	< 0.12	NA	NA	< 0.12	NA	< 0.12	NA	0.13 B	< 0.12	< 0.12	0.15 B	< 0.12	NA	NA	NA	NA	NA	NA	NA	< 0.12	< 0.12	0.14 B	< 0.12	< 0.12	< 0.12
Sep-06	<3	NA	< 3	NA	< 3	NA	< 3	NA	< 3	NA	NA	< 3	NA	< 3	< 3	< 3	< 3	< 3	NA	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	< 3	< 3	< 3
Oct-07	**9.6**	NA	2.4 J	NA	**8.4**	NA	1.8 J	NA	< 3	NA	NA	< 3	NA	< 3	< 3	< 3	2 J	< 3	NA	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	< 3	< 3	< 3
Mar-09	<60	NA	< 60	NA	< 60	NA	< 60	NA	< 60	NA	NA	< 60	NA	< 60	< 60	< 60	< 60	< 60	NA	NA	NA	NA	NA	NA	NA	< 60	< 60	< 60	NA	< 60	< 60
May-10	**3.8**	NA	< 3	NA	< 3	NA	< 3	NA	< 5 D14	NA	NA	< 3	NA	< 3	< 3	< 3	< 3	< 3	NA	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	NA	< 3	< 3
Sep-11	**8.3**	0.67 J	0.4 J	< 3	0.82 J	< 15	0.24 J	NA	< 3	< 3	0.41 J	0.2 J	NA	< 3	< 3	< 3	0.15 J	<15	NA	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	< 3	NA	NA
Nov-12	3.0	NA	0.3 J	NA	< 3	NA	< 3	NA	< 3	NA	NA	< 3	NA	< 3	< 3	< 3	0.24 J	< 3	NA	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	< 3	< 3	NA
Mar-14	< 3	NA	< 3	NA	< 3	NA	< 3	NA	< 3	NA	NA	< 3	NA	< 3	< 3	< 3	< 3	< 3	NA	NA	NA	NA	NA	NA	NA	< 3	< 3	< 3	< 3	< 3	< 3
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.3	<2.3	<2.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	**4.01**	NA	0.1 J	NA	0.1 J	NA	0.1 U	NA	0.1 U	NA	NA	0.1 J	NA	0.1 J	0.1 J	0.1 J	0.1 J	0.1 U	NA	0.1 J	0.1 J	0.9 J	NA	NA	NA	0.1 U	0.14 J	0.14 J	0.32 J	0.16 J	0.11 J
Jan-17	2.3 J	NA	0.6 J	NA	0.6 J	NA	0.4 U	NA	NA	NA	NA	0.5 J	NA	0.7 J	1.2 J	0.9 J	0.4 U	0.4 U	NA	0.4 U	0.4 U	0.7 J	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.7 J	0.4 U	0.4 U	0.4 U
May-18	1.31 J	NA	1.0 J	NA	0.56 J	NA	4 U	NA	NA	NA	NA	4 U	NA	4 U	4 U	4 U	0.77 J	1.13 J	1.54 J	0.43 J	4.5 U	4 U	1.16 J	0.43 J	**3.82 J**	0.81 J	0.59 J	0.94 J	0.65 J	0.58 J	0.43 J
Jul-19	1.08 J	NA	0.4 U	NA	0.42 U	NA	0.42 U	NA	NA	NA	NA	0.42 U	NA	0.42 U	0.42 U	0.42 U	2.48 J	1.03 J	0.8 J	0.42 U	0.42 U	1.4 J	0.42 U	0.42 U	1.72 J	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U
Oct-20	7 U	NA	7 U	NA	7 U	NA	7 U	NA	NA	NA	NA	7 U	NA	**3.54 J**	0.42 U	0.48 J	0.42 U	0.42 U	0.74 J	0.42 U	0.42 U	0.42 U	0.42 U	1.94 J	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U

Notes:

ARAR Standard = 3 µg/L; USEPA MCL = 6 µg/L; and, Part 5 MCL = 6 µg/L

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions

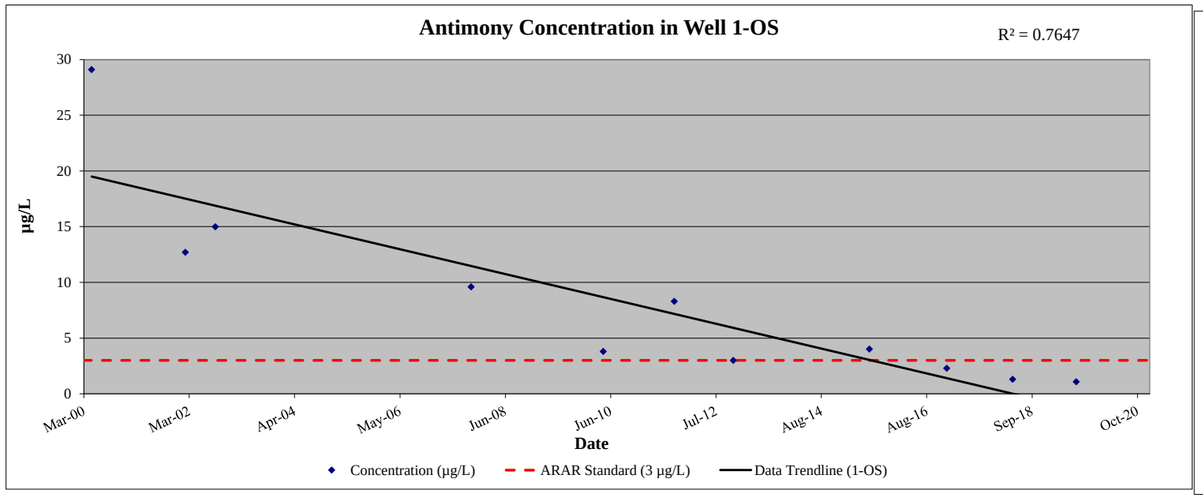
ND or U = Not Detected

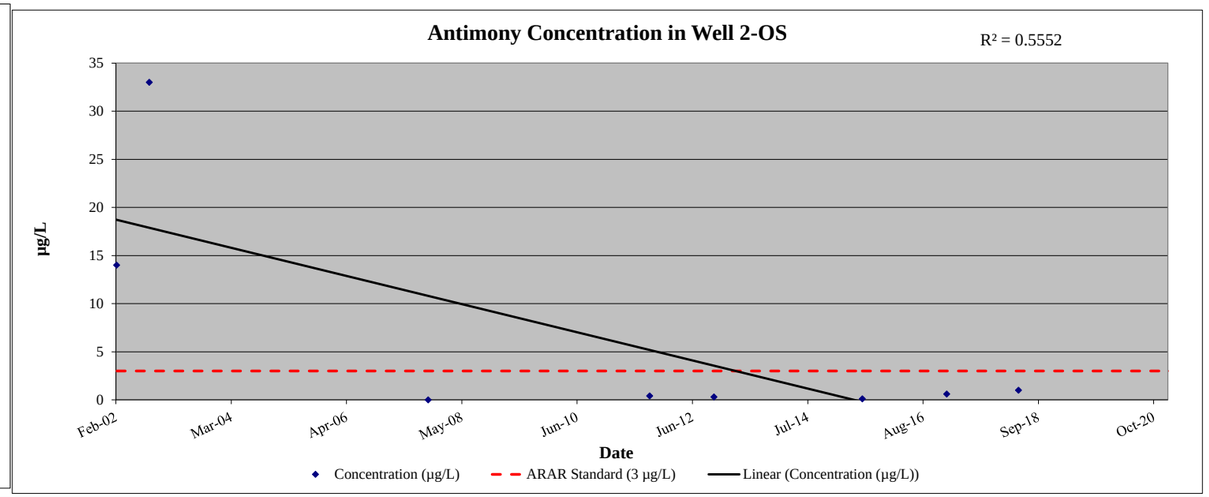
B = The analyte was detected above the reporting limit in the associated method blank.

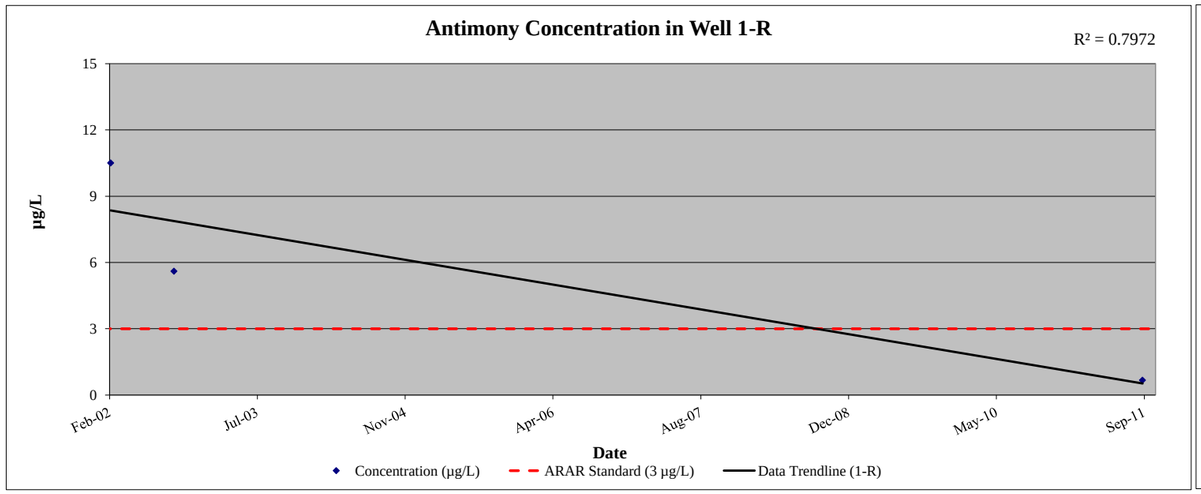
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

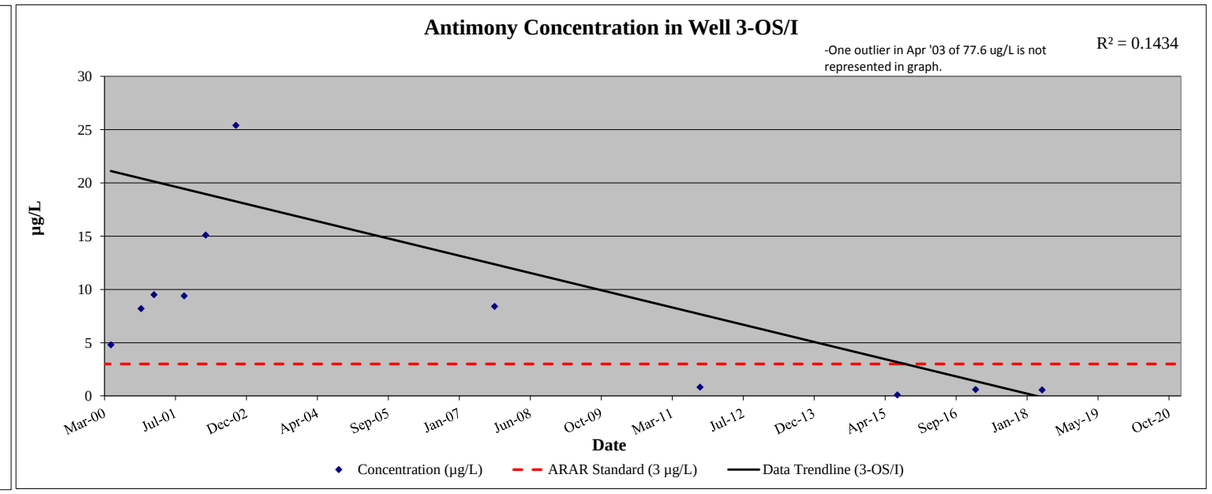
N = Spiked sample recovery not within control limits.

Summary of Historical Groundwater Quality Results - Antimony (µg/L)
Town of Ramapo Landfill

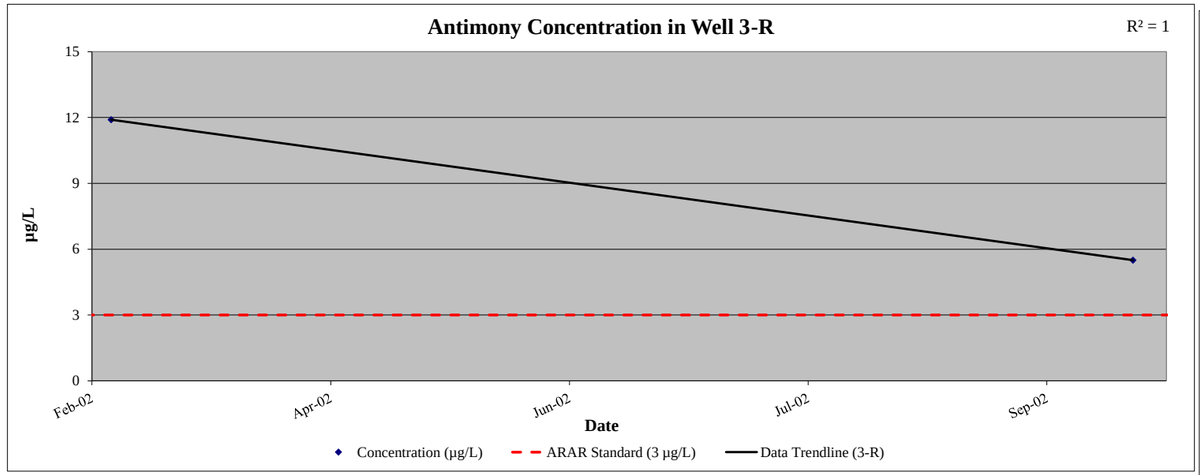


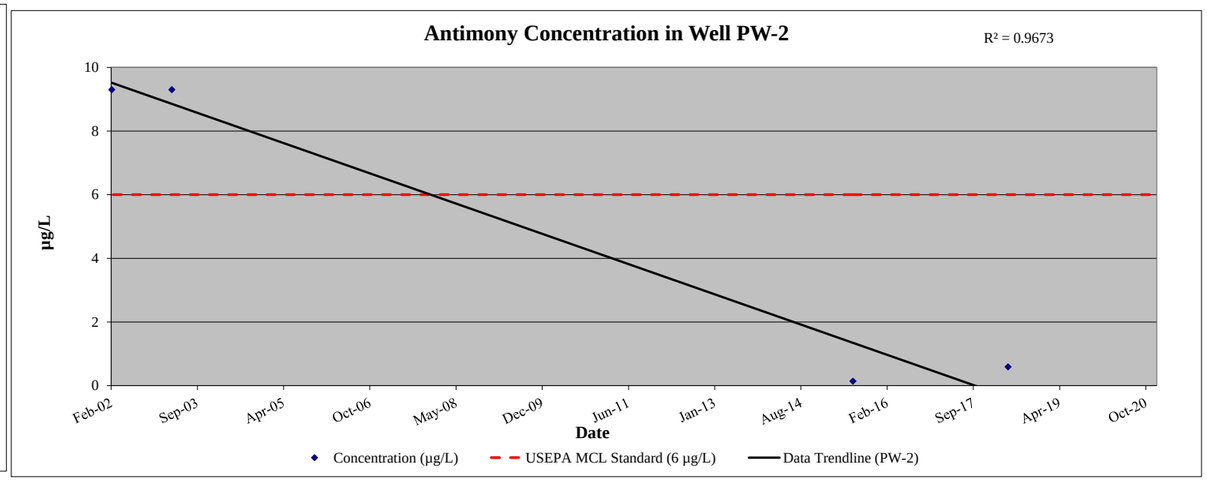


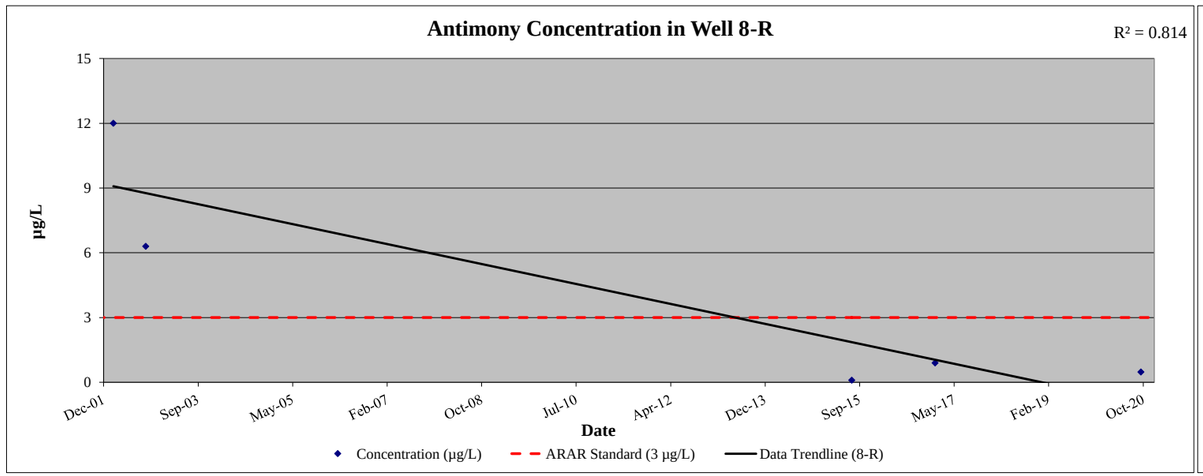


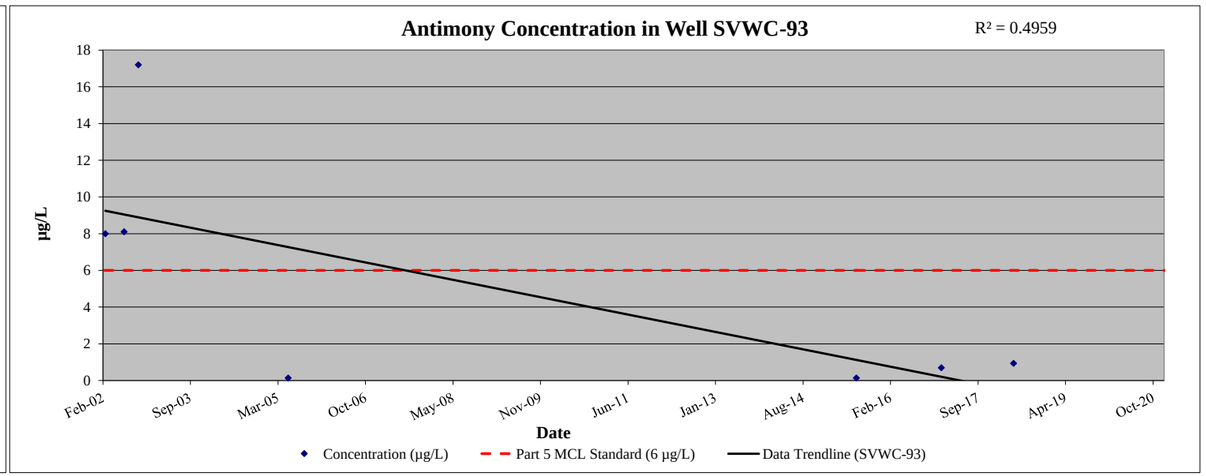


Summary of Historical Groundwater Quality Results - Antimony (µg/L)
Town of Ramapo Landfill









Summary of Historical Groundwater Quality Results - Antimony (µg/L)
Town of Ramapo Landfill

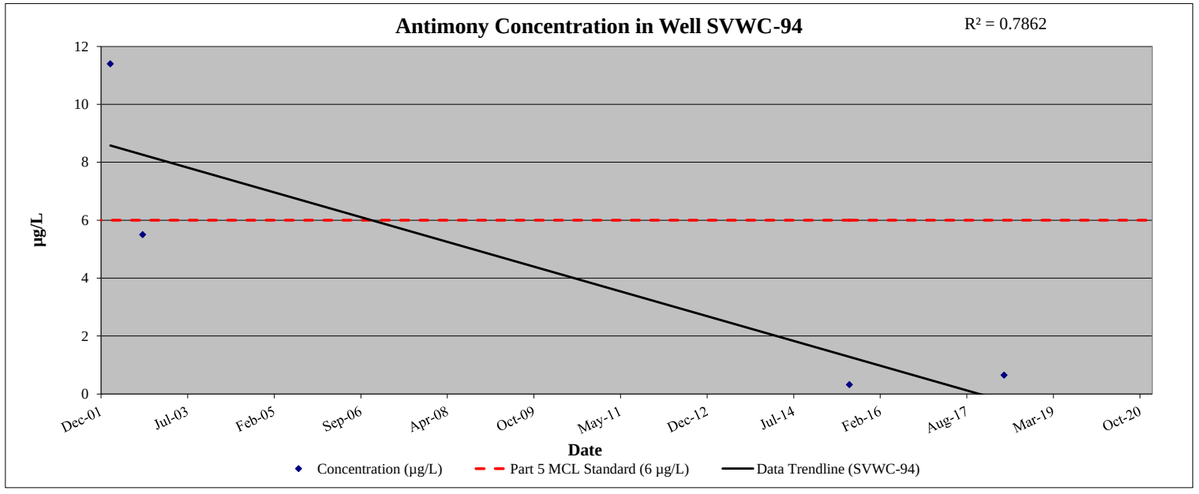


Table 11

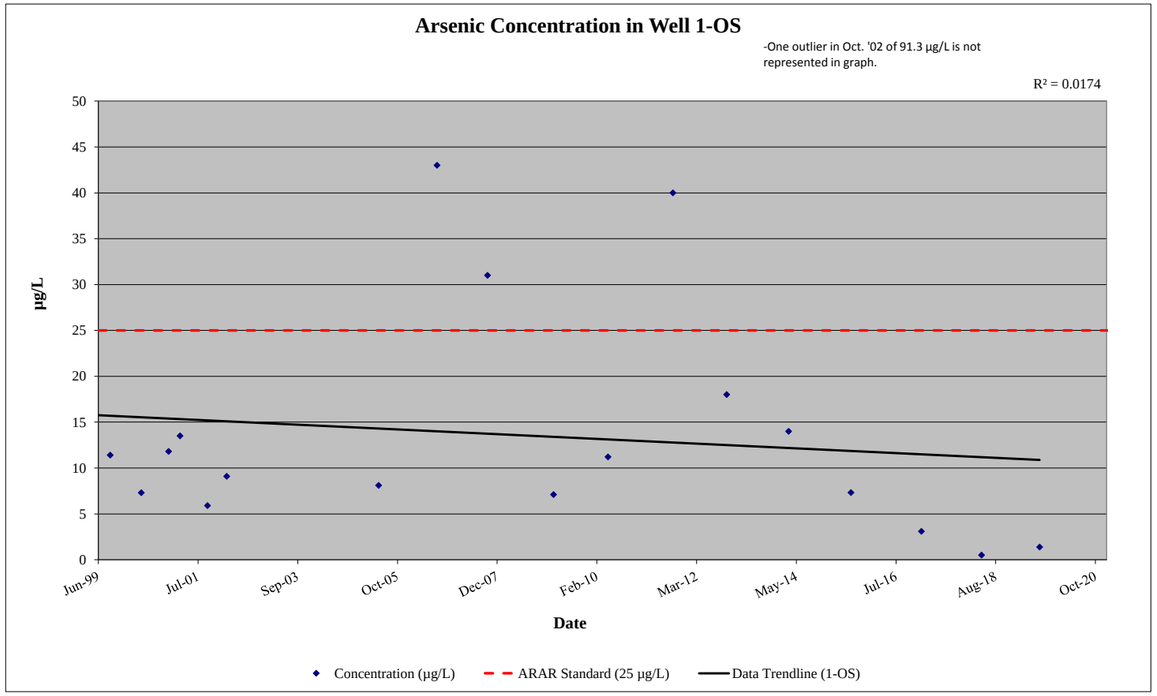
Summary of Historical Groundwater Quality Results - Arsenic (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.7	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	9.7	7.1	ND	ND	ND	ND
Sep-99	11.4	ND	ND	ND	ND	7.9	8.5	ND	NA	ND	ND	ND	ND	ND	ND	6.2	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	7.3 B	< 2.6	6.6 B	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	3.2 B	NA	< 2.6	< 2.6	< 2.6	< 2.6	6.6 B	< 2.6	< 2.6	< 2.6	< 2.6	NA	NA	NA	NA	NA	NA	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.9 B	11.8	< 1.8	< 1.8	< 1.8	7.7 B	NA	NA	NA	NA	NA	NA	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Dec-00	11.8	< 1.8	9.4 B	< 1.8	< 1.8	< 1.8	< 1.8	3.3 B	16.8	NA	< 1.8	3.4 B	< 1.8	2.6 B	10 B	< 1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2.2	< 2.2	3 B	NA	NA	NA	NA	NA	NA	< 2.2	NA	NA	NA	NA	NA
Mar-01	13.5	3.7 B	10.5	< 2.2	< 2.2	< 2.2	2.6 B	< 2.2	3.9 B	NA	< 2.2	< 2.2	< 2.2	2.6 B	13.4	< 2.2	< 2.2	5.8 B	6.3 B	NA	NA	NA	NA	NA	NA	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2.2	10.5	< 2.2	< 2.2	< 2.2	3.7 B	NA	NA	NA	NA	NA	NA	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2
Oct-01	5.9 B	2.6 B	8.4 B	< 2.2	< 2.2	< 2.2	< 2.2	< 2.2	NA	2.7 B	< 2.2	2.6 B	< 2.2	2.4 B	6.9 B	< 2.2	< 2.2	< 2.2	4 B	NA	NA	NA	NA	NA	NA	< 2.2	< 2.2	NA	NA	NA	NA
Mar-02	9.1 B	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	NA	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	9.7 B	3.4 B	< 2.6	< 2.6	< 2.6	NA	NA	NA	NA	NA	NA	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.9 B	10.2	2.7 B	< 2.6	< 2.6	5.5 B	NA	NA	NA	NA	NA	NA	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
Oct-02	**91.3**	4 B	13.3	< 2.6	< 2.6	< 2.6	7.5 B	< 2.6	NA	< 2.6	< 2.6	5.2 B	NA	< 2.6	5.2 B	< 2.6	< 2.6	< 2.6	< 2.6	NA	NA	NA	NA	NA	NA	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6	< 2.6
Apr-03	NA	< 2.4	10.3	< 2.4	5.4 B	< 2.4	4 B	4.4 B	NA	< 2.4	< 2.4	< 2.4	NA	< 2.4	7.5 B	< 2.4	< 2.4	< 2.4	3.7 B	NA	NA	NA	NA	NA	NA	< 2.4	2.7	< 2.4	< 2.4	< 2.4	< 2.4
Mar-04	NA	NA	7.4 B	NA	< 1.9	NA	< 2.7	NA	**30.4**	NA	NA	9.8 B	NA	< 1.9	8.9 B	< 1.9	< 1.9	< 1.9	3.4 B	NA	NA	NA	NA	NA	NA	5.6 B	< 1.9	< 1.9	2.9 B	< 1.9	< 1.9
Jun-05	8.1 B	NA	4 B	NA	< 3.1	NA	< 3.1 N	NA	NA	< 3.1	NA	3.1 N	NA	3.7 B, N	8.6 B, N	< 3.1 N	< 3.1 N	< 3.1 N	< 3.1 N	NA	NA	NA	NA	NA	NA	< 3.1 N	< 3.1 N	4.2 B, N	< 3.1 N	< 3.1 N	< 3.1 N
Sep-06	**43**	NA	2.8 J	NA	6.9	NA	2.8 J	NA	**33**	NA	NA	4.7 J	NA	< 5	26	3.1 J	< 5	4.5 J	5.9	NA	NA	NA	NA	NA	NA	< 5	< 5	1.2 J	< 5	2 J	1.3 J
Oct-07	**31**	NA	6.2	NA	< 5	NA	< 5	NA	< 5	NA	NA	< 5	NA	< 5	15	< 5	4.2 J	4.4 J	6.1	NA	NA	NA	NA	NA	NA	< 5	< 5	< 5	< 5	< 5	< 5
Mar-09	7.1 J	NA	< 10	NA	< 10	NA	< 10	NA	9.8 J	NA	NA	< 10	NA	< 10	12	< 10	< 10	< 10	5.7 J	NA	NA	NA	NA	NA	NA	< 100	< 10	< 10	NA	< 10	< 10
May-10	11.2	NA	< 10	NA	< 10	NA	< 10	NA	15.5	NA	NA	< 10	NA	< 10	10.1	< 10	< 10	< 10	8.4 J	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	< 10	< 10
Sep-11	**40**	< 10	< 10	< 10	**53**	7.3 J	< 10	NA	9.5 J	< 10	< 10	< 10	NA	< 10	6.1 J	< 10	< 10	7.6 J	7.9 J	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10	NA	NA
Nov-12	18	NA	< 10	NA	15	NA	9.8 J	NA	9.3 J	NA	NA	8.8 J	NA	< 10	12	< 10	< 10	< 10	< 10	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10	< 10	NA
Mar-14	14		< 10	NA	< 10	NA	< 10	NA	6.7 J	NA	NA	9.3 J	NA	< 10	11	< 10	< 10	< 10	< 10	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10	< 10	< 10
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	7.32	NA	0.7	NA	0.3 J	NA	0.7	NA	3.1	NA	NA	1	NA	0.4 J	6.8	0.6	1	0.1 U	3.8	0.2 J	0.2 J	0.2 J	NA	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.22 J	0.2 U
Jan-17	3.1	NA	1	NA	0.2 U	NA	0.2 J	NA	NA	NA	NA	0.2 J	NA	0.2 J	3.8	0.6	0.2 U	0.2 U	0.6	0.4 J	0.2 U	0.2 U	0.3 J	0.47 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 J	0.2 U
May-18	0.51	NA	1.22	NA	0.87	NA	0.18 J	NA	NA	NA	NA	0.5 U	NA	0.5 U	4.32	0.28 J	0.5 U	0.5 U	23.54	0.5 U	0.5 U	0.5 U	0.58	0.42 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Jul-19	1.38	NA	1.91	NA	1.48	NA	0.16 U	NA	NA	NA	NA	0.35 J	NA	0.17 J	4.54	0.34 J	0.39 J	0.16 U	1.42	0.36 J	0.16 U	0.16 U	0.5	0.45 J	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Oct-20	2 U	NA	2 U	NA	2 U	NA	2 U	NA	NA	NA	NA	2 U	NA	0.22 J	4.47	0.67	0.16 U	0.16 U	0.46 J	0.21 J	0.16 U	0.16 U	0.35 J	0.41 J	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U

Notes:
ARAR Standard = 25 µg/L; USEPA MCL = 10 µg/L; and, Part 5 MCL = 10 µg/L
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.
NA = Not Analyzed
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions
ND or U = Not Detected
B = The analyte was detected above the reporting limit in the associated method blank.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.

Summary of Historical Groundwater Quality Results - Arsenic (µg/L)
Town of Ramapo Landfill



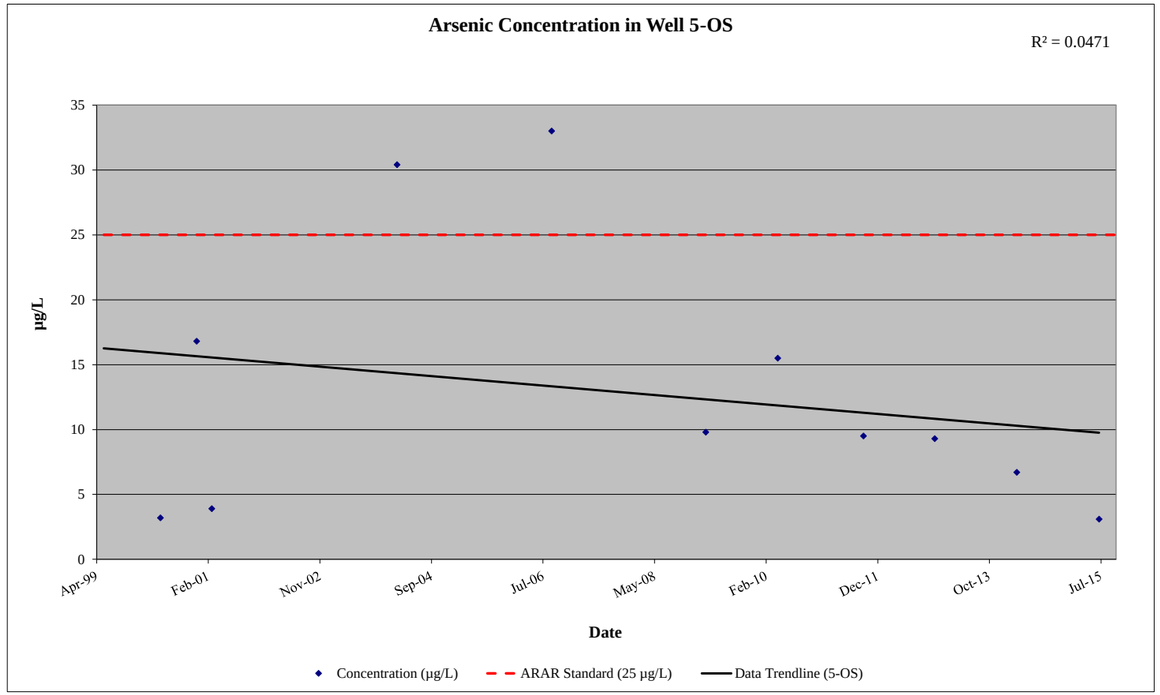


Table 12

Summary of Historical Groundwater Quality Results - Chromium (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																															
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.2	**56.8**	2	1.1	6.8	15	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Sep-99	**1850**	**73.4**	**285**	ND	**321**	**75.7**	**87.7**	ND	NA	10.6	2.7	**59.2**	ND	31	ND	ND	ND	ND	47.3	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	**2100**	**58.6**	**415**	4 B	**687**	**51.2**	36.8	< 0.5	**69.3**	NA	14.7	**200**	< 0.5	30.1	10	1.1 B	34.5	10.8	3 B	NA	NA	NA	NA	NA	NA	0.75 B	< 0.5	< 0.5	0.53 B	< 0.5	< 0.5
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.9 B	17.3	2.2 B	7.4 B	5 B	1.6 B	NA	NA	NA	NA	NA	NA	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Dec-00	**405**	9.8 B	**120**	4.7 B	**453**	**213**	17.9	< 0.9	**165**	NA	7.2 B	34.7	< 0.9	8.8 B	22.9	3.6 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.9	1.4 B	< 0.9	< 0.9	< 0.9
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.1	4.1 B	2.4 B	NA	NA	NA	NA	NA	NA	< 0.9	NA	NA	NA	NA	NA
Mar-01	**253**	**119**	**128**	< 0.9	**522**	**124**	13.2	< 0.9	38.6	NA	3.9 B	**51.9**	< 0.9	25.8	49.9	7.7 B	17	28.8	4.1 B	NA	NA	NA	NA	NA	NA	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.55 B	19.9	5.56 B	< 0.9	2.35 B	1.12 B	NA	NA	NA	NA	NA	NA	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Oct-01	20.6	47.1	**87.1**	3.9 B	**467**	12.7	4 B	2.2 B	NA	3.3 B	3.3 B	48.4	2.3 B	20.6	2.3 B	3.9 B	17.4	1.2 B	1.9 B	NA	NA	NA	NA	NA	NA	1.2 B	1.8 B	NA	NA	NA	NA
Mar-02	**60.1**	10.2	35.6	9.6 B	**257**	33.5	8.7 B	< 0.83	NA	10.5	24.6	22.1	< 0.83	16.4	4.8 B	1.2 B	12.5	2.4 B	< 0.83	NA	NA	NA	NA	NA	NA	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7 B	9.5 B	1.7 B	5.2 B	3.8 B	< 0.83	NA	NA	NA	NA	NA	NA	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83	< 0.83
Oct-02	**386** E	**82.9** E	**2040** E	4.6 B, E	**1,400** E	31.2 E	35 E	1.3 B, E	NA	1.2 B, E	9.9 B, E	**108** E	NA	33.8 E	9.5 B, E	6.1 B, E	9.7 B, E	< 0.83 E	< 0.83 E	NA	NA	NA	NA	NA	NA	< 0.83 E	< 0.83 E	< 0.83	< 0.83	< 0.83	< 0.83
Apr-03	NA	< 0.8	**89.8**	4.8 B	**4,250**	**86.8**	17.9	< 0.8	NA	5.6 B	5.6 B	36	NA	10.4	15.5	< 0.8	19.2	4.2 B	< 0.8	NA	NA	NA	NA	NA	NA	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8	< 0.8
Mar-04	NA	NA	**87.1**	NA	**816**	NA	9.4 B	NA	**237**	NA	NA	**133**	NA	10.3	19.4	2 B	10.4	2.8 B	2.6 B	NA	NA	NA	NA	NA	NA	1.3 B	1.5 B	1.4 B	1.9 B	1.5 B	1.2 B
Jun-05	31.4	NA	**101**	NA	**2,020**	NA	**56.7**	NA	NA	5.6 B	NA	5.7 B	NA	29.6	3.3 B	2.5 B	2.4 B	1.4 B	1.9 B	NA	NA	NA	NA	NA	NA	< 0.9	< 0.9	< 0.9	0.93 B	< 0.9	0.94 B
Sep-06	**2,400**	NA	**120**	NA	**7,200**	NA	**1300**	NA	**690**	NA	NA	**87**	NA	**140**	30	42	**55**	36	4.1 J	NA	NA	NA	NA	NA	NA	2.7 J	2.8 J	3.2 J	2 J	< 10	< 10
Oct-07	**530**	NA	**250**	NA	**3,400**	NA	**270**	NA	32	NA	NA	**96**	NA	**85**	41	11	**330**	**150**	4.3 J	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10	< 10	< 10
Mar-09	**140**	NA	**480**	NA	**3,900**	NA	**230**	NA	**170**	NA	NA	**61**	NA	**680**	27	11	**300**	38	< 10	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	< 10	< 10
May-10	**1,990**	NA	**722**	NA	**2,570**	NA	**522**	NA	**278**	NA	NA	**158**	NA	**152**	14	< 4	**176**	**53.9**	2.5 J	NA	NA	NA	NA	NA	NA	< 4	< 4	< 4	NA	< 4	< 4
Sep-11	**11,100**	**970**	**1000**	2.7 J	**29,700**	**2600**	**290**	NA	**120**	11	**93**	**480**	NA	**1500**	< 4	< 4	**430**	**380**	< 4	NA	NA	NA	NA	NA	NA	< 4	< 4	< 4	< 4	NA	NA
Nov-12	**2,400**	NA	**280**	NA	**4,100**	NA	**1700**	NA	**130**	NA	NA	**230**	NA	**140**	2.9 J	< 4	**100**	2.6 J	< 4	NA	NA	NA	NA	NA	NA	< 4	< 4	< 4	< 4	< 4	NA
Mar-14	**5,200**	NA	**1100**	NA	**2,800**	NA	**540**	NA	**96**	NA	NA	**300**	NA	**85**	3.7 J	ND	**290**	11	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2 U	2 U	3.3 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	**6,604**	NA	**62.2**	NA	**229**	NA	**132.9**	NA	40.6	NA	NA	**254.2**	NA	**230.4**	2.8	2.4	**56.7**	2.5	2.4	2.4	1.5 J	7.9	NA	NA	NA	0.27 J	0.24 J	0.21 J	0.54 J	2 U	0.23 J
Jan-17	**1,259**	NA	**229.2**	NA	**595**	NA	**210**	NA	NA	NA	NA	**131.5**	NA	**296.7**	2.7	19.2	3.7	36.8	13	0.4 J	1.9	5.2	2	2	3.3	0.4 J	0.3 J	1.3	1.3	0.4 J	0.4 J
May-18	**60.24**	NA	10.30	NA	**3,375**	NA	**156.6**	NA	NA	NA	NA	18.74	NA	3.77	0.88 J	1.01	4.0	44.67	46.0	0.35 J	0.71 J	**181.1**	0.59 J	11.38	1.21	0.30 J	0.22 J	0.31 J	0.23 J	0.31 J	0.40 J
Jul-19	**308.30**	NA	2.29	NA	**8,580**	NA	**73.5**	NA	NA	NA	NA	16.42	NA	12.7	0.64 J	45.65	12.0	15.42	5.5	0.17 U	0.26 J	11.4	2.53	1.94	7.32	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.18 J
Oct-20	**318**	NA	**94.0**	NA	**3,190**	NA	**106**	NA	NA	NA	NA	**573**	NA	**61.22**	1.04	**52.39**	0.81 J	46.8	3.55	0.31 J	0.34 J	29.04	1.32	25.97	2.01	0.35 J	0.17 U	0.18 J	0.17 U	0.27 J	0.40 J

Notes:

ARAR Standard = 50 µg/L; USEPA MCL = 100 µg/L; and, Part 5 MCL = 100 µg/L

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions

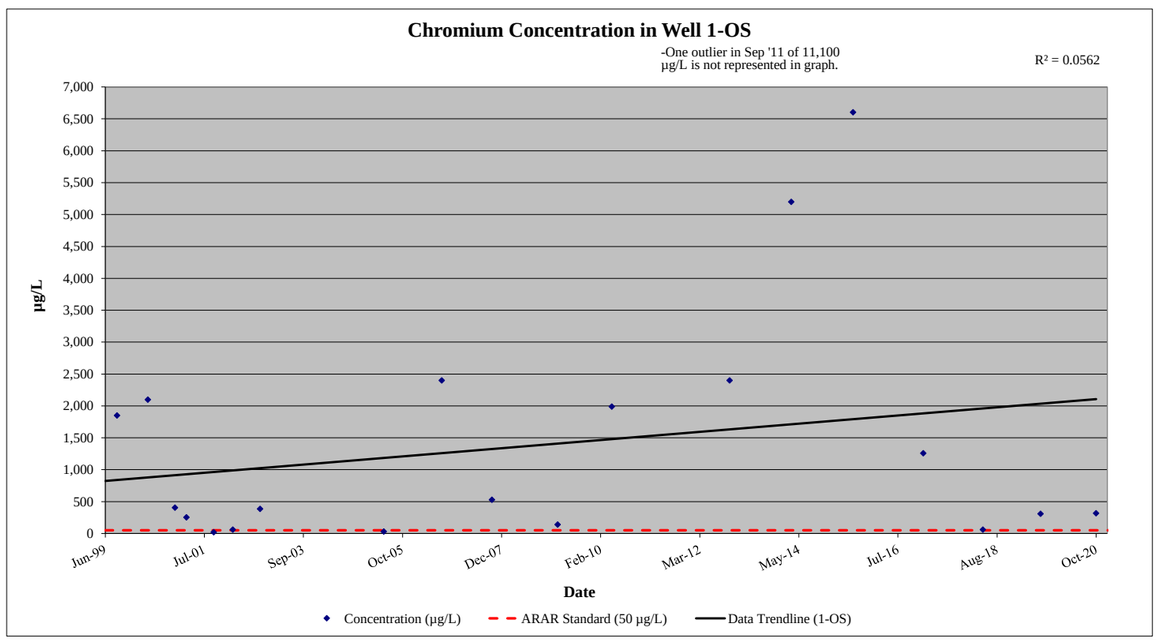
ND or U = Not Detected

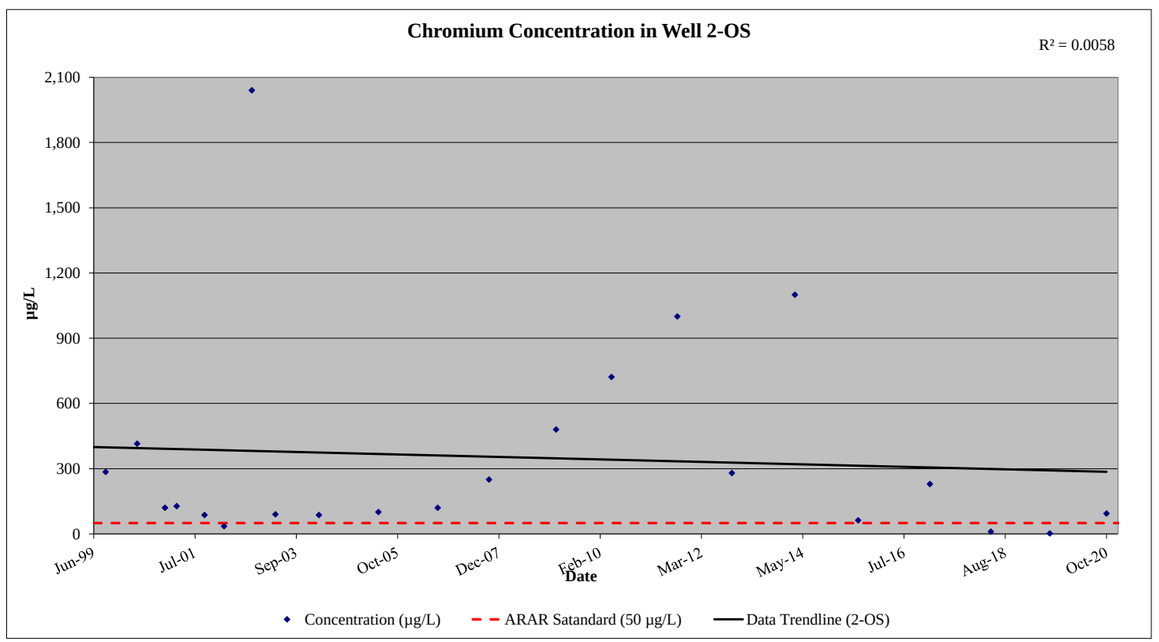
B = The analyte was detected above the reporting limit in the associated method blank.

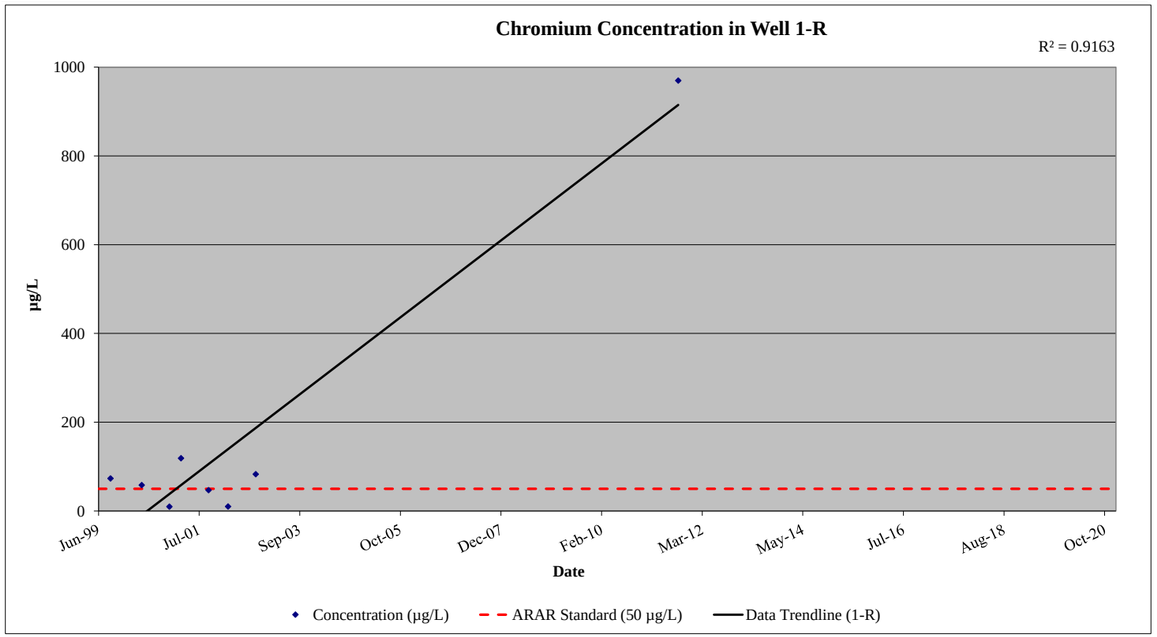
E = Indicates an estimated value because of the possible presence of interference.

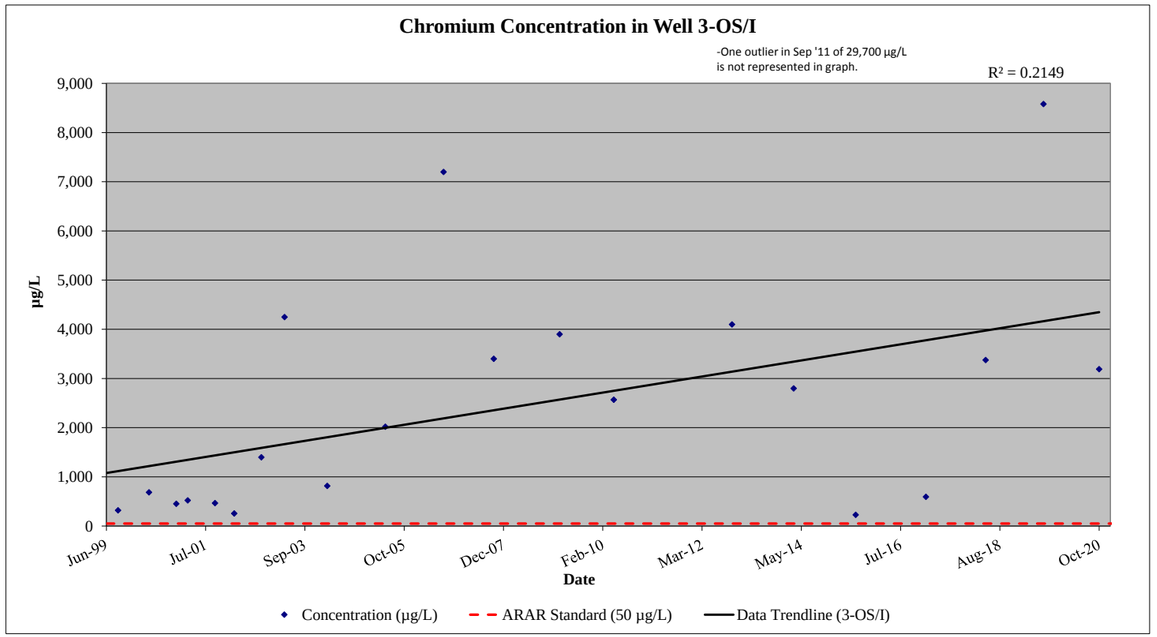
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

Summary of Historical Groundwater Quality Results - Chromium (µg/L)
Town of Ramapo Landfill

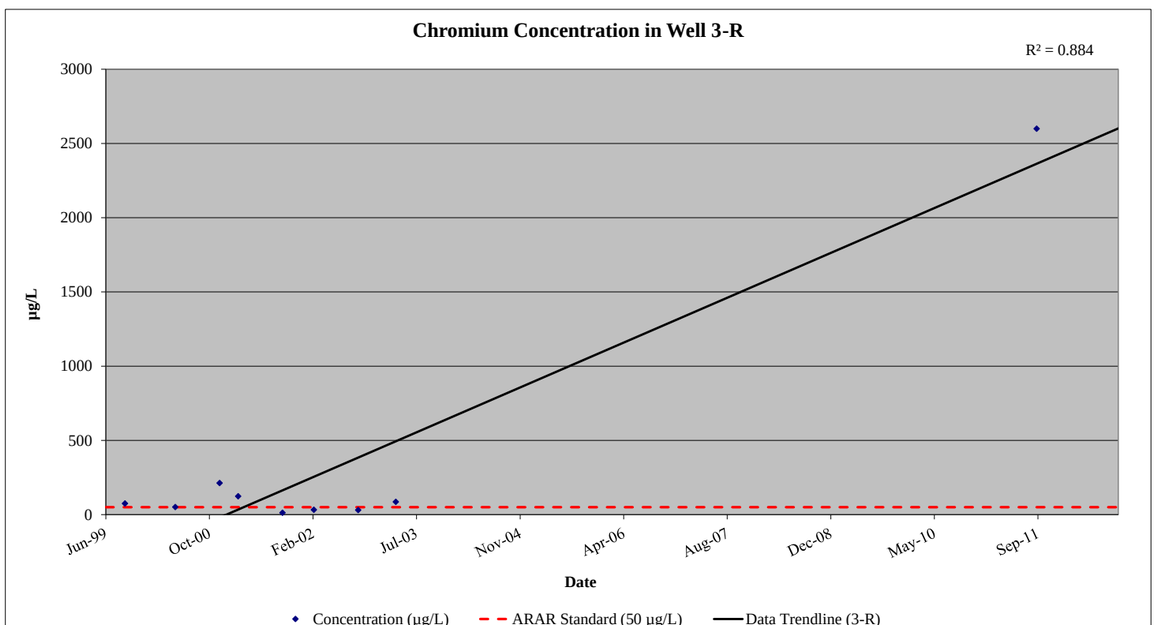


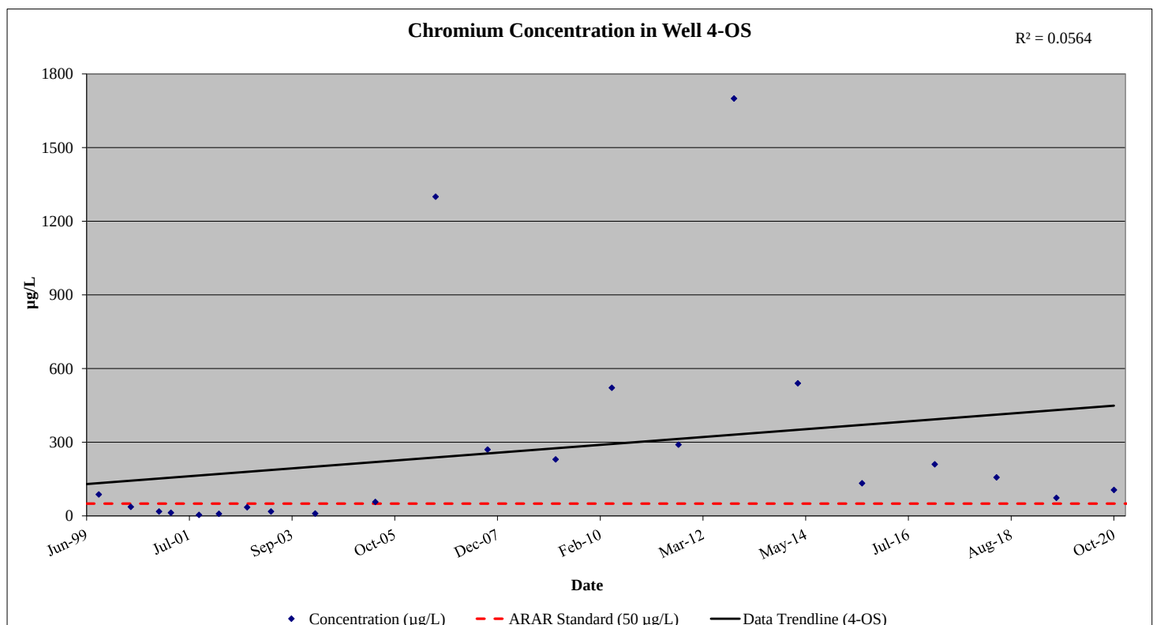


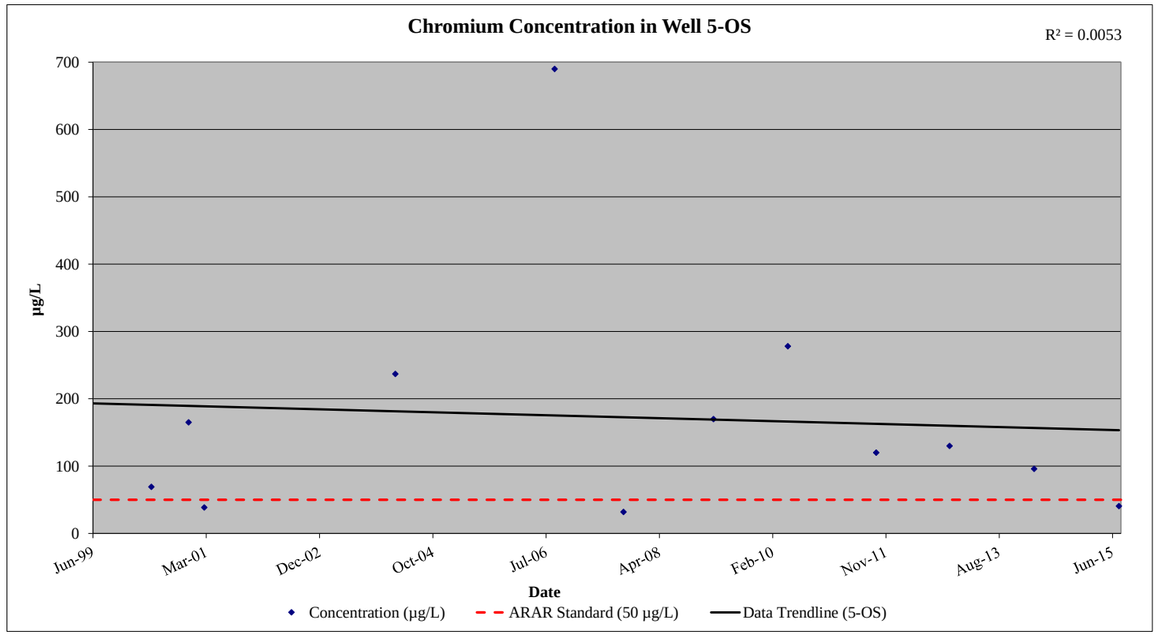


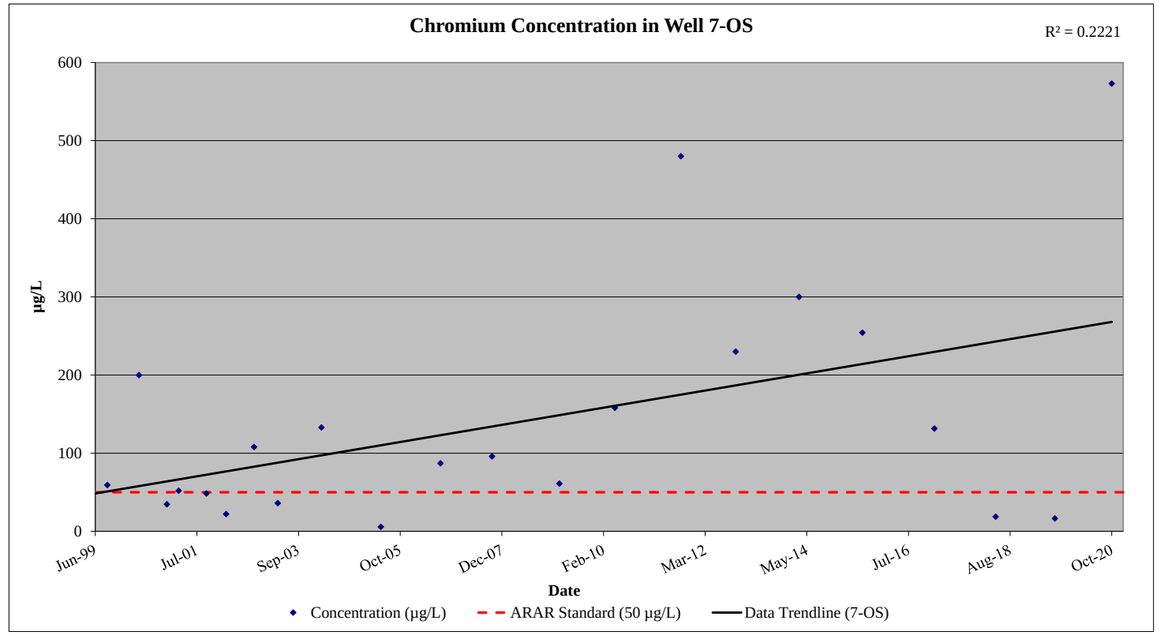


Summary of Historical Groundwater Quality Results - Chromium (µg/L)
Town of Ramapo Landfill

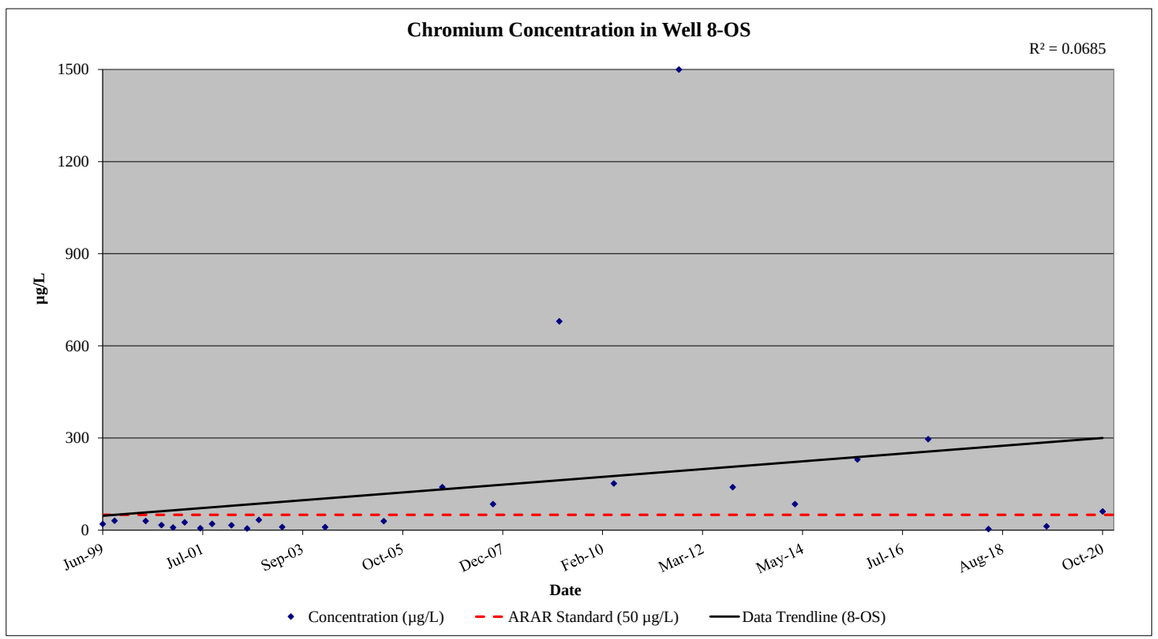


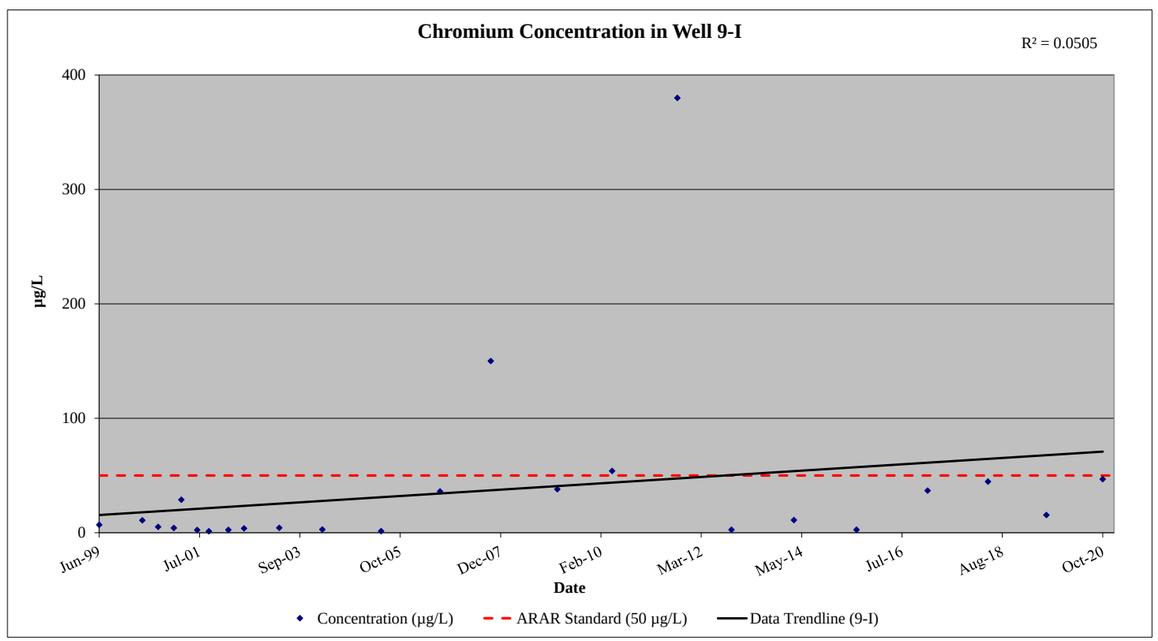






Summary of Historical Groundwater Quality Results - Chromium (µg/L)
Town of Ramapo Landfill





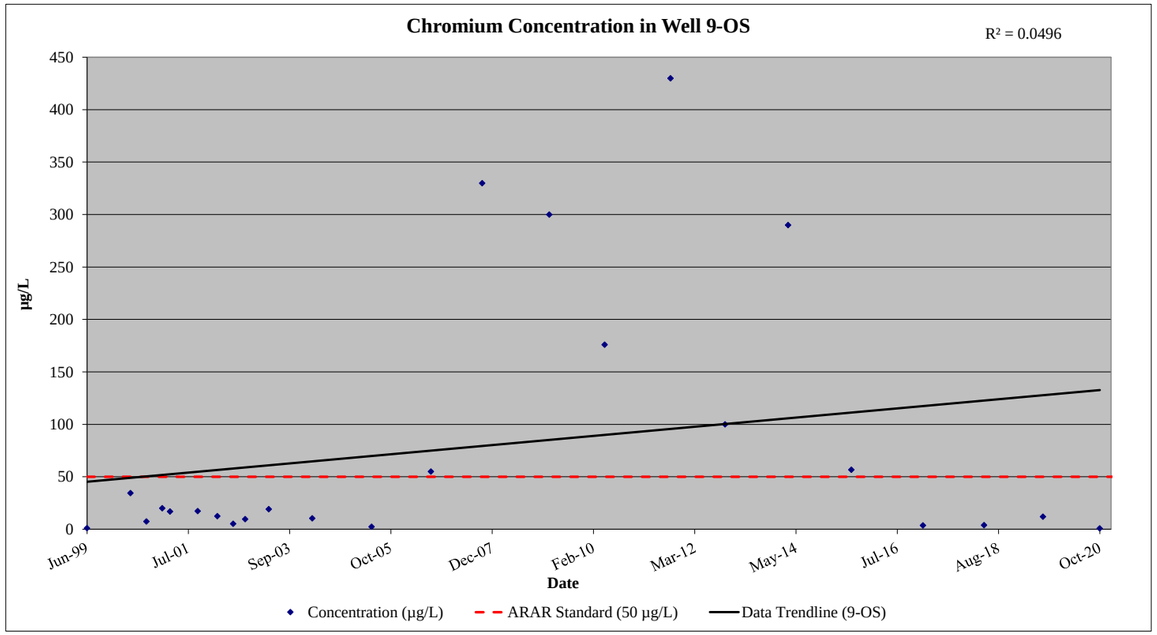


Table 13

Summary of Historical Groundwater Quality Results - Iron (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																															
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**473**	**19,100**	**1,140**	**515**	**949**	**4,360**	NA	NA	NA	NA	NA	NA	163	114	169	83	90	68
Sep-99	**76,200**	**1,420**	**6,910**	**2,640**	**1,990**	**8,770**	**50,200**	**7,500**	NA	**700**	40	**11,300**	ND	**747**	**4,270**	**5,260**	198	ND	**3,110**	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	**40,500**	**867**	**32,900**	**1,790**	**3,310**	**1,610**	**16,300**	**5,900**	**41,500**	NA	**5,000**	**4,300**	128	**1,200**	**9,870**	**1,180**	**1,880**	**2,820**	**1,340**	NA	NA	NA	NA	NA	NA	18 B	59 B	9 B	4 B	23 B	5 B
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**8,900**	**22,900**	**2,230**	**2,230**	**3,920**	**9,110**	NA	NA	NA	NA	NA	NA	< 2.8	37 B	4 B	< 2.8	< 2.8	< 2.8
Dec-00	**43,800** E	**990** E	**32,800** E	**1,440** E	**3,620** E	**3,020** E	**11,300** E	**7,240** E	**101,000** E	NA	**2,370** E	**12,400** E	**310** E	**4,450** E	**26,400** E	**2,580** E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	62 B,E	37 B,E	21 B,E	14 B,E	53 B,E
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2,640**	**2,570**	**8,280**	NA	NA	NA	NA	NA	NA	5 B	NA	NA	NA	NA	NA
Mar-01	**54,100**	**15,700**	**37,700**	**337**	**5,810**	**4,400**	**7,690**	**4,220**	**22,800**	NA	**826**	**4,170** N	213	**6,020** N	**47,600** N	**2,500** N	**3,660** N	**24,000** N	**8,080** E	NA	NA	NA	NA	NA	NA	15 B	11 B	62 B	22 B	25 B	28 B
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2,460**	**27,600**	**1,680**	< 2.8	**2,350**	**8,320**	NA	NA	NA	NA	NA	NA	**561**	26 B	29 B	7 B	103	19 B
Oct-01	**16,400** E	**6,260** E	**24,500** E	299	**4,090** E	**1,140** E	**1,760** E	**3,850** E	NA	186 E	96 E	**10,400** E	22 B,E	**4,600** E	**6,560** E	**1,770** E	**3,780** E	145 E	**8,150** E	NA	NA	NA	NA	NA	NA	16 B	59 B,E	NA	NA	NA	NA
Mar-02	**35,200**	**1,330**	**10,500**	**6,830**	**1,810**	**2,020**	**4,310**	**3,250**	NA	**5,490**	**10,300**	**6,790**	73	**3,060**	**16,700**	**2,110**	**896**	**2,000**	**5,980**	NA	NA	NA	NA	NA	NA	8 B	36 B	< 4.5	11 B	13 B	< 4.5
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3,540** *	**16,700 ***	**1,580** *	**789** *	**3,290** *	**7,110** *	NA	NA	NA	NA	NA	NA	8 *B	17 *B	19 B	< 6.6	9 B	< 6.6
Oct-02	**127,000** E	**41,600** E	**48,200** E	**1,760** E	**30,800** E	**13,300** E	**32,800** E	**4,520** E	NA	61 E	**1,230** E	**21,200** E	NA	**6,600** E	**17,600** E	**1,490** E	**500** E	40 B,E	**6,140** E	NA	NA	NA	NA	NA	NA	24 B,E	33 B,E	**939** E	53 B,E	91 E	11 B,E
Apr-03	NA	**374**	**40,700**	**2,550**	**31,800**	**4,830**	**14,100**	**6,250**	NA	**1,910**	**1,760**	**1,850**	NA	**2,490**	**21,400**	**969**	**1,600**	**3,710**	**5,720**	NA	NA	NA	NA	NA	NA	9 B	25 B	24 B	20 B	56 B	7 B
Mar-04	NA	NA	**14,700**	NA	**12,900**	NA	**3,050**	NA	**150,000**	NA	NA	**38,500**	NA	**1,030**	**29,700**	**1,160**	**506**	**1,630**	**4,890**	NA	NA	NA	NA	NA	NA	20 B	28 B	203	30 B	157	< 16.8
Jun-05	**54,200** N	NA	144 N	NA	**60,500** N	NA	**1,230**	NA	NA	124 N	NA	**1,310**	NA	**3,150**	**13,900**	**751**	**453**	**318**	**6,430**	NA	NA	NA	NA	NA	NA	19 B	115	14 B	8	17 B	< 7.7
Sep-06	**120,000**	NA	**12,000**	NA	**77,000**	NA	**12,000**	NA	**410,000**	NA	NA	**17,000**	NA	**1,200**	**43,000**	**4,700**	**1,600**	**24,000**	**7,000**	NA	NA	NA	NA	NA	NA	15 J	34 J	21 J	< 50	260	< 50
Oct-07	**160,000**	NA	**31,000**	NA	**25,000**	NA	**24,000**	NA	**850**	NA	NA	**13,000**	NA	**780**	**39,000**	**1,300**	**6,300**	**41,000**	**8,500**	NA	NA	NA	NA	NA	NA	17 J	130	46 J	12 J	76	< 50
Mar-09	**38,000**	NA	**12,000**	NA	**30,000**	NA	**10,000**	NA	**110,000**	NA	NA	**5,800**	NA	**3,800**	**33,000**	**1,300**	**7,800**	**23,000**	**9,400**	NA	NA	NA	NA	NA	NA	12 J	140	29 J	NA	33 J	16 J
May-10	**44,100** B	NA	**22,700**	NA	**24,000** B	NA	**6,830**	NA	**176,000**	NA	NA	**19,300** B	NA	**1,070** B	**27,000** B	**563** B	**4,640** B	**30,300** B	**12,500** B	NA	NA	NA	NA	NA	NA	23 B,J	71 B	< 50	NA	30 B,J	**598** B
Sep-11	**82,000**	**8,600** B	**16,000**	260	**158,000**	**18,000**	**3,500**	NA	**66,500**	**1,300**	**28,100** B	**19,300**	NA	**6,500**	**12,600** B	**350** B	**7,500** B	**40,100** B	**7,300 B**	NA	NA	NA	NA	NA	NA	28 B,J	80 B	140 B	90 B	NA	NA
Nov-12	**45,200**	NA	**6,600**	NA	**34,800**	NA	**18,500**	NA	**68,500**	NA	NA	**14,300**	NA	**950**	**15,800**	300	**1,300**	75	**5,400**	NA	NA	NA	NA	NA	NA	55	250	< 50	< 50	< 50	NA
Mar-14	**66,000**	NA	**17,900**	NA	**16,600**	NA	**8,900**	NA	**53,500**	NA	NA	**24,500**	NA	**540**	**14,400**	210	**3,700**	100	**6,800**	NA	NA	NA	NA	NA	NA	34 J	110	ND	ND	ND	ND
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	114	**997**	**2,010**	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	**53,600**	NA	**2,310**	NA	**2,750**	NA	**2,500**	NA	**7,800**	NA	NA	**5,570**	NA	**1,280**	**11,600**	**311**	**1,760**	23 J	**9,270**	273	**331**	85	NA	NA	NA	30 J	90	<20	<20	**480**	<20
Jan-17	**10,400**	NA	**3,670**	NA	**8,560**	NA	**1,160**	NA	NA	NA	NA	**806**	NA	**2,140**	**9,520**	**373**	42 J	241	**968**	186	22 J	111	219	165	**463**	48 J	66	34 J	47 J	104	76
May-18	**533**	NA	**324**	NA	**25,200**	NA	**1,140**	NA	NA	NA	NA	265	NA	56.4	**10,200**	294	66.9	**347**	**22,800**	275	133	**765**	**435**	**3,230**	55.3	193	148	36.2 J	50 U	21.7 J	19.7 J
Jul-19	**7,150**	NA	**3,710**	NA	**37,600**	NA	**633**	NA	NA	NA	NA	348	NA	240.0	**8,930**	195	270.0	**113**	**1,650**	19 J	95	78	**1,150**	106	200.0	21 J	32 J	19.1 U	54	54.0	19.1 U
Oct-20	**9,660**	NA	**1,050**	NA	**13,600**	NA	**1,180**	NA	NA	NA	NA	**5,310**	NA	**552**	**9,630**	**1,560**	26 J	**305**	**533**	181	39 J	151	62	266	25 J	29.1 J	46.7 J	19.1 U	19.1 U	19.1 U	30 J

Notes:
ARAR Standard = 300 µg/L; USEPA Secondary MCL = Not Available; and, Part 5 MCL = 300 µg/L
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
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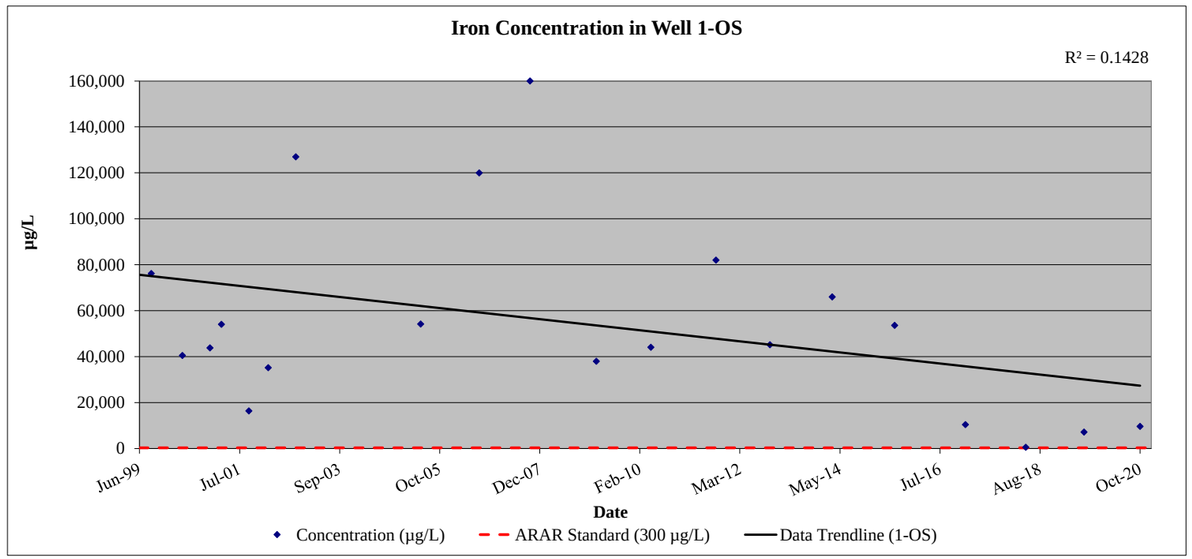
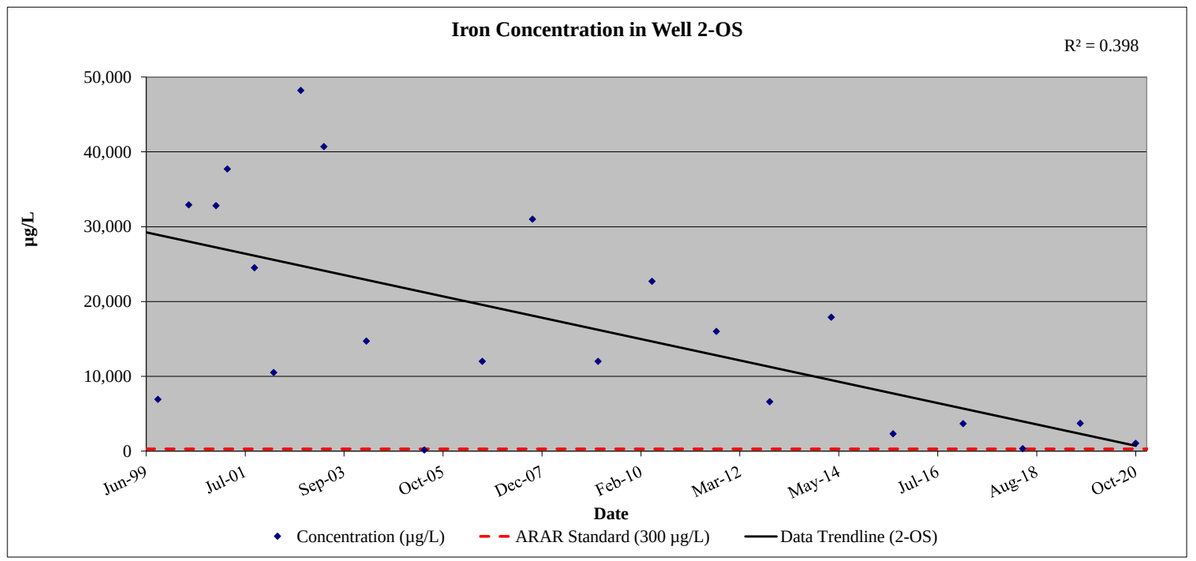
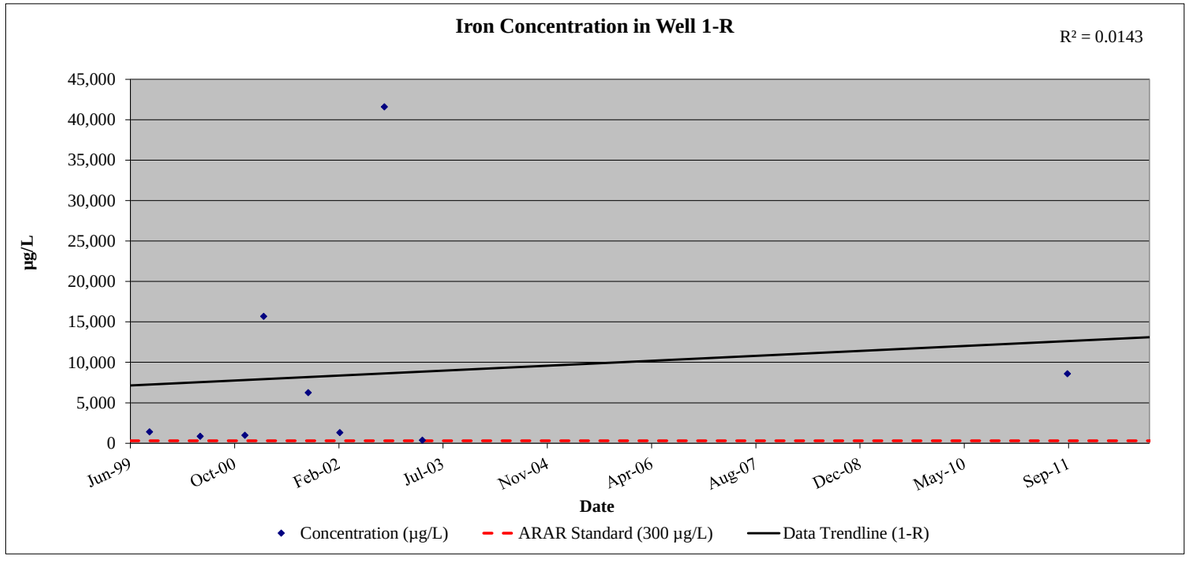
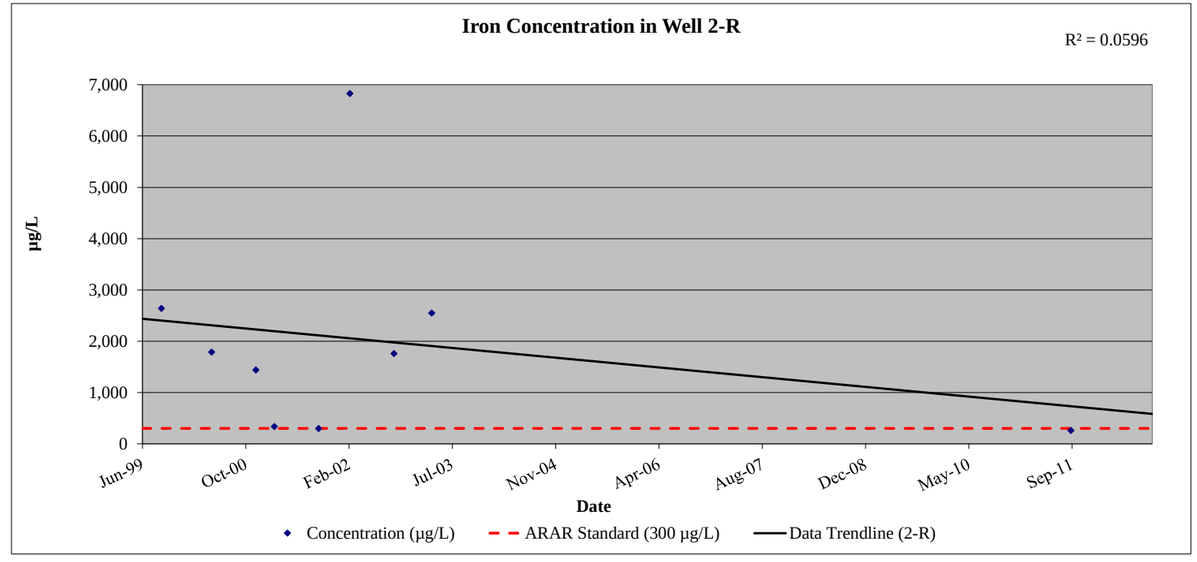
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.

Summary of Historical Groundwater Quality Results - Iron (µg/L)
Town of Ramapo Landfill

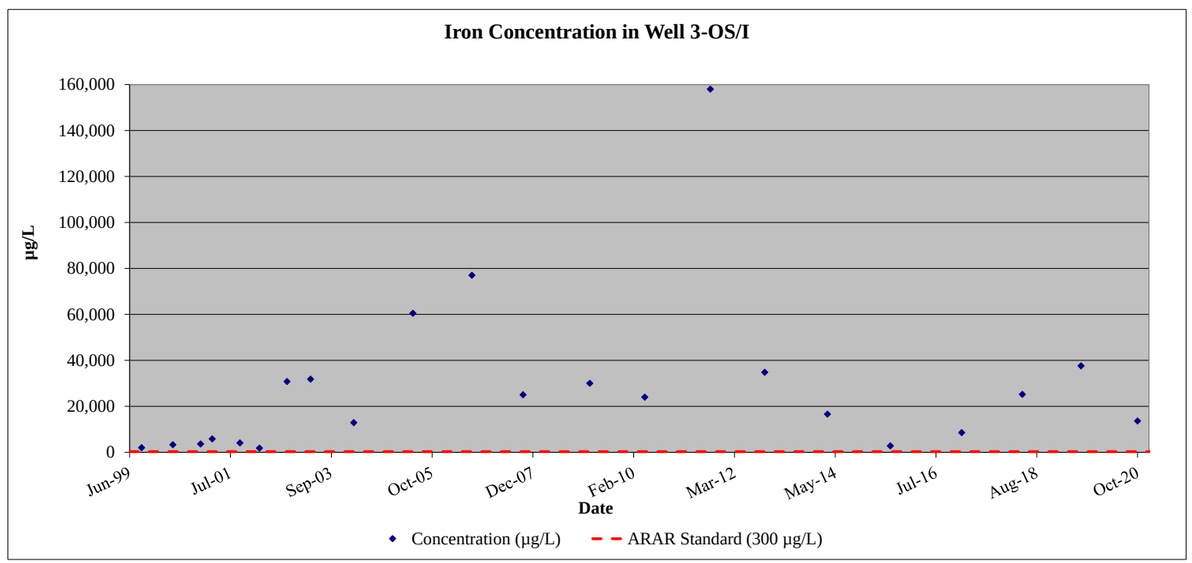


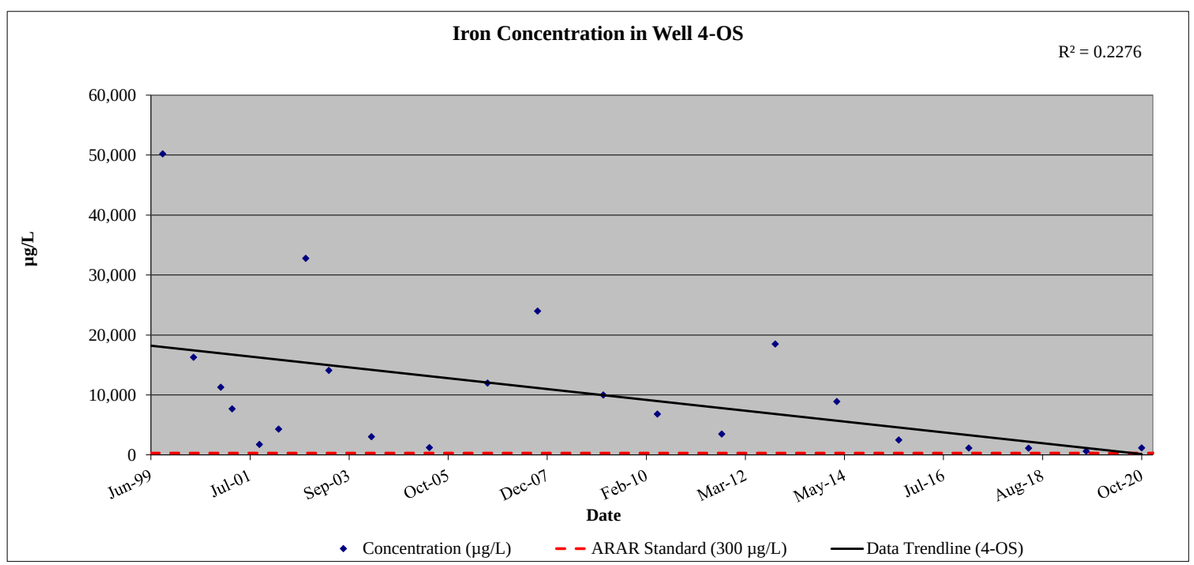


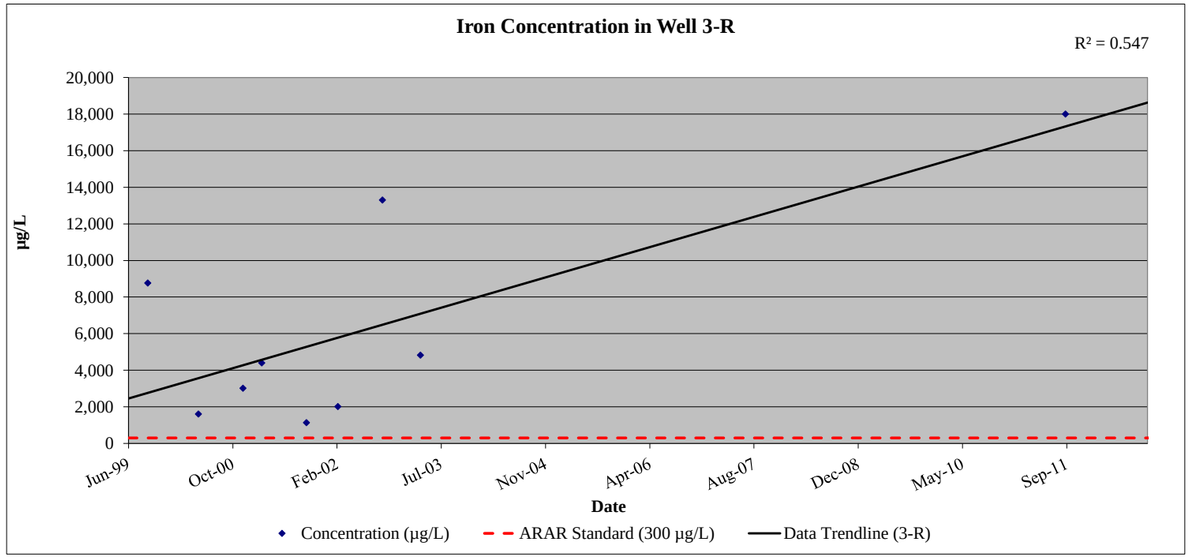


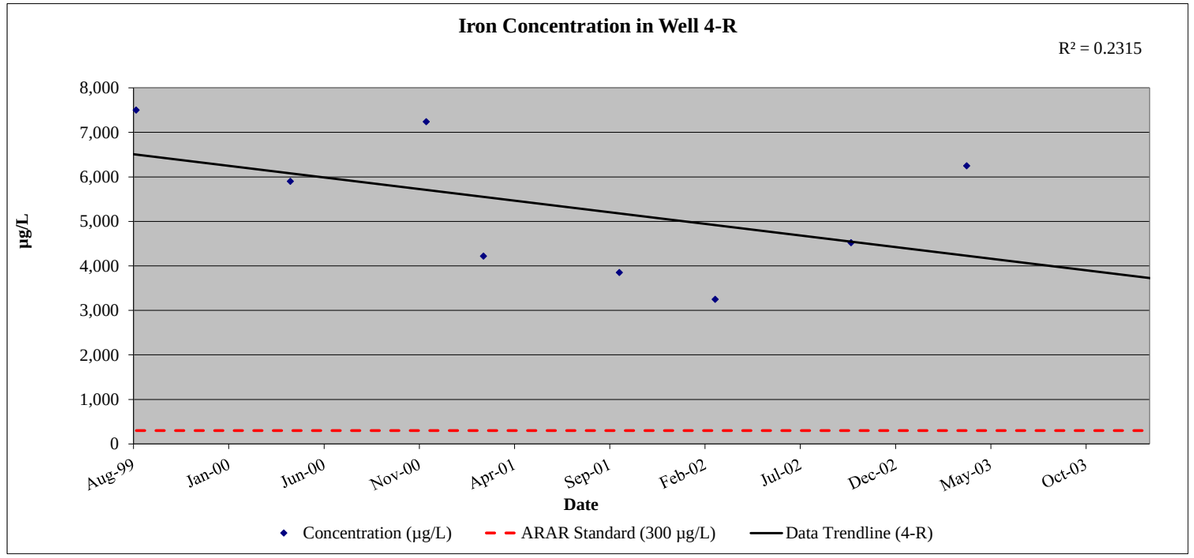


Summary of Historical Groundwater Quality Results - Iron (µg/L)
Town of Ramapo Landfill









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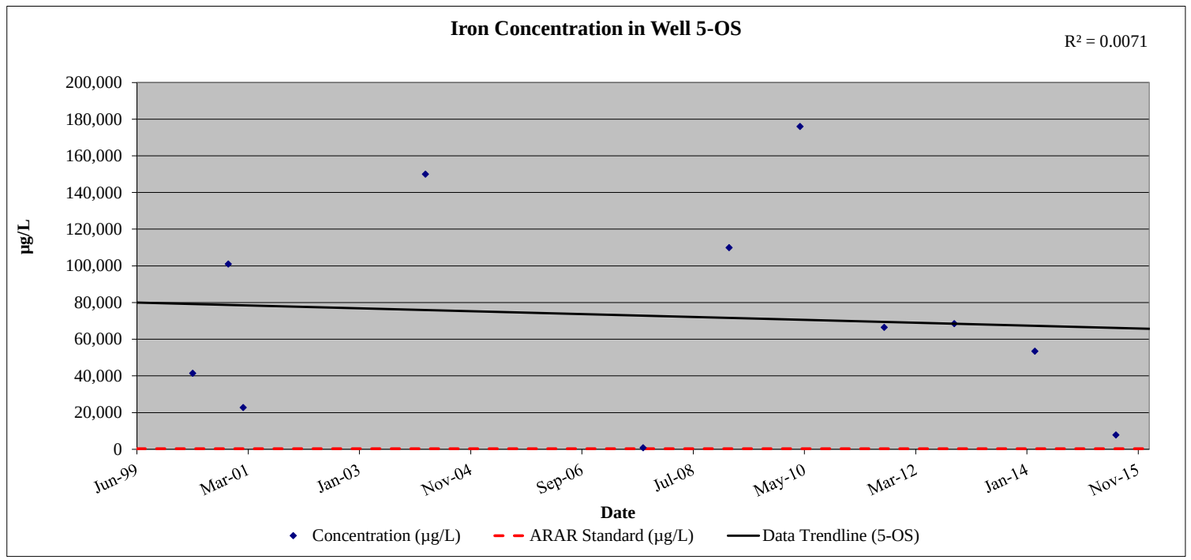
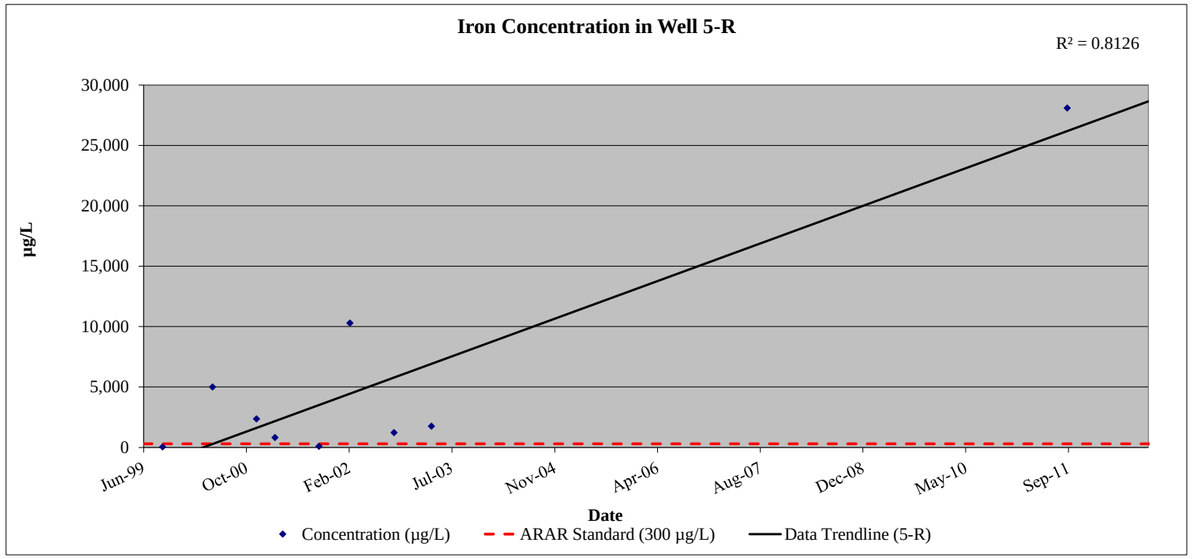
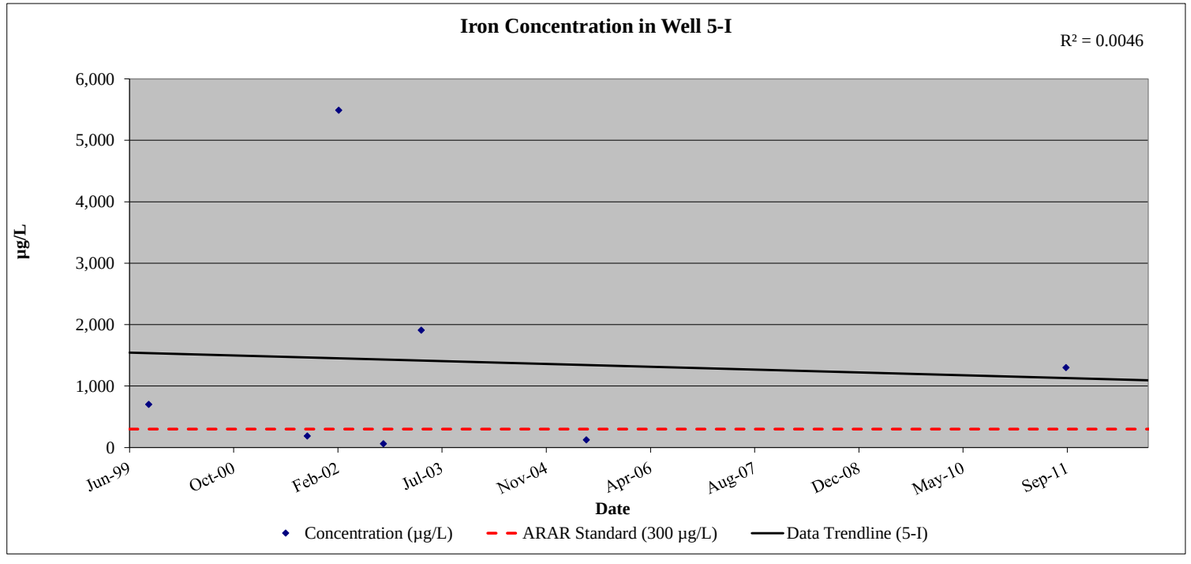
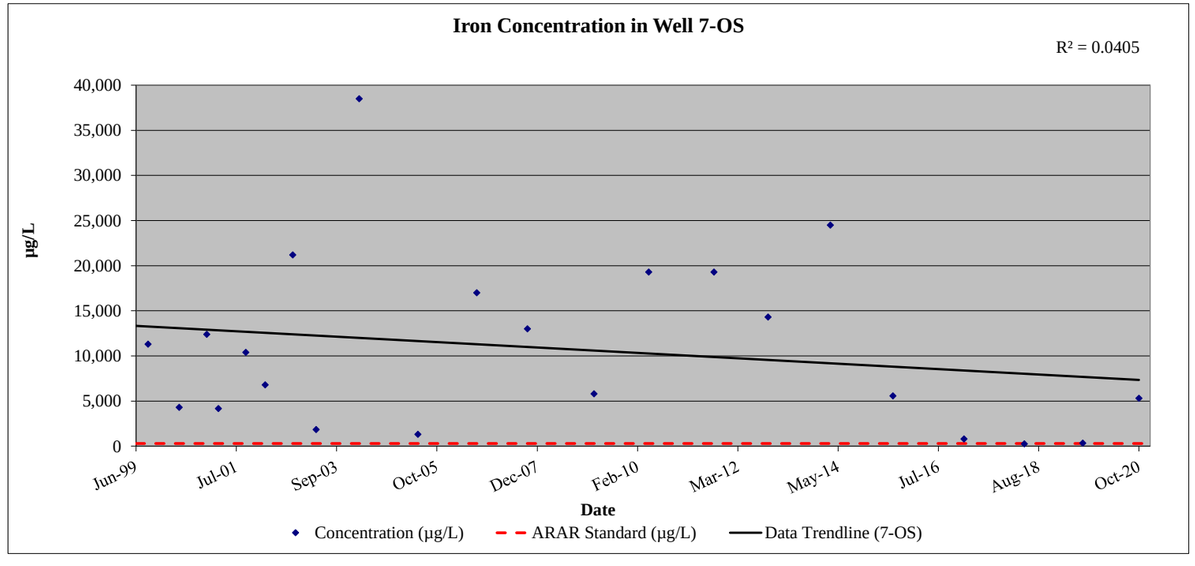
Town of Ramapo Landfill

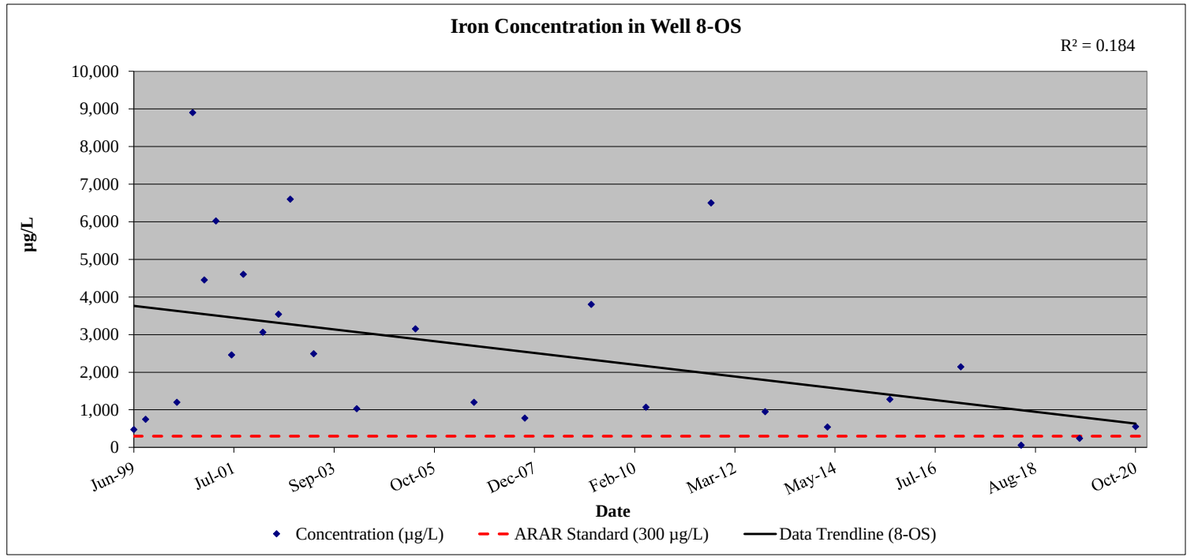


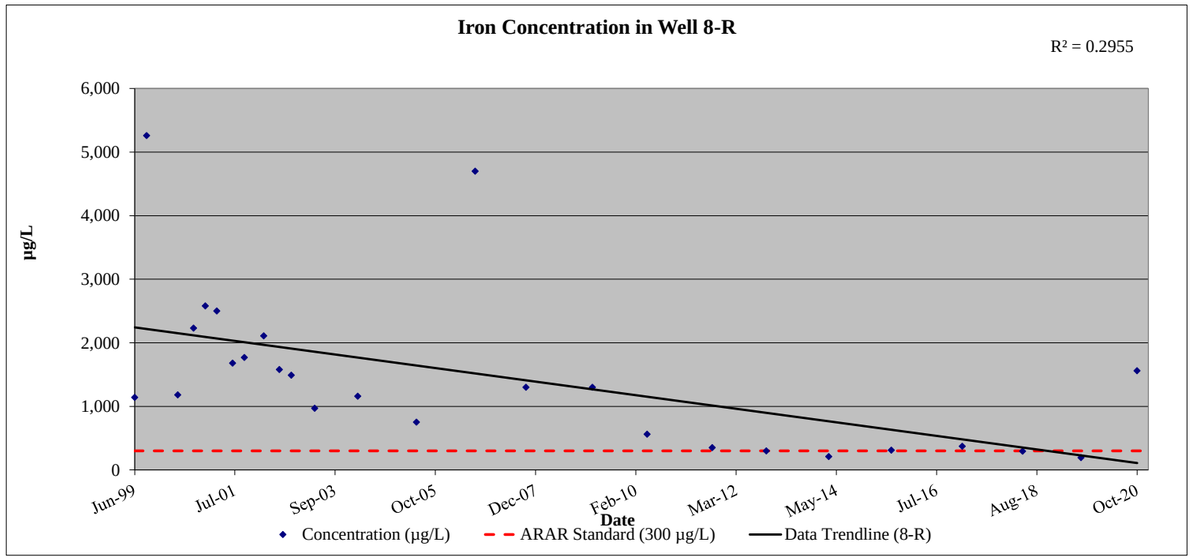


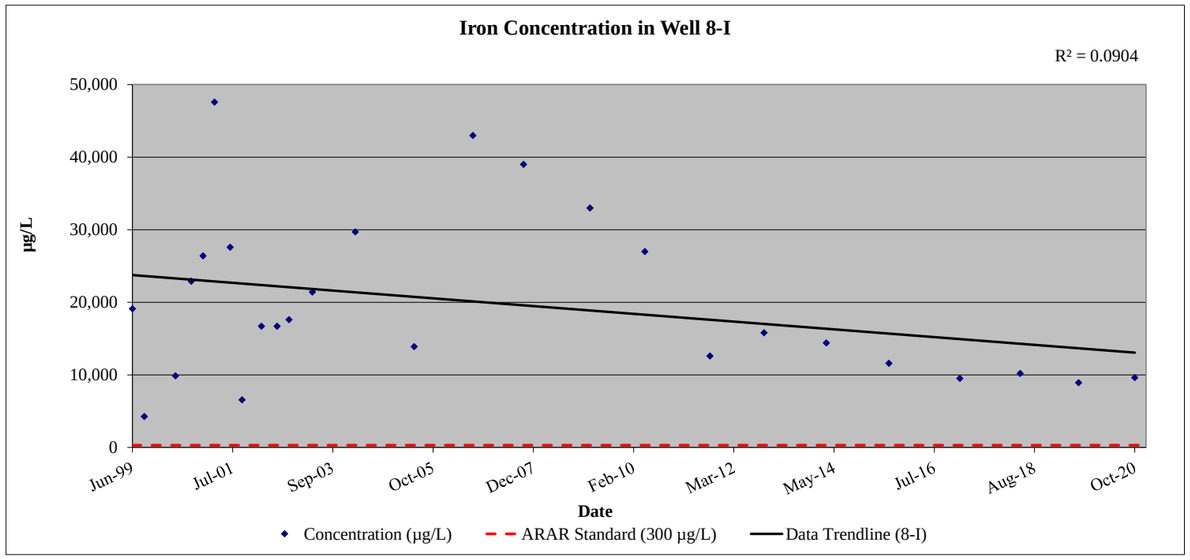


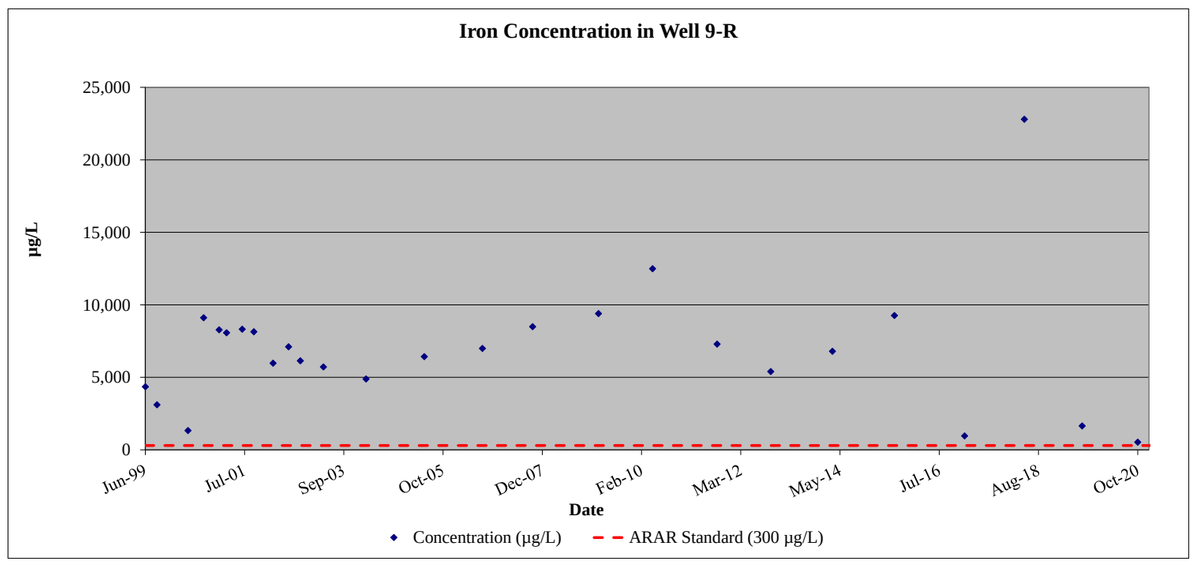


Summary of Historical Groundwater Quality Results - Iron (µg/L)
Town of Ramapo Landfill

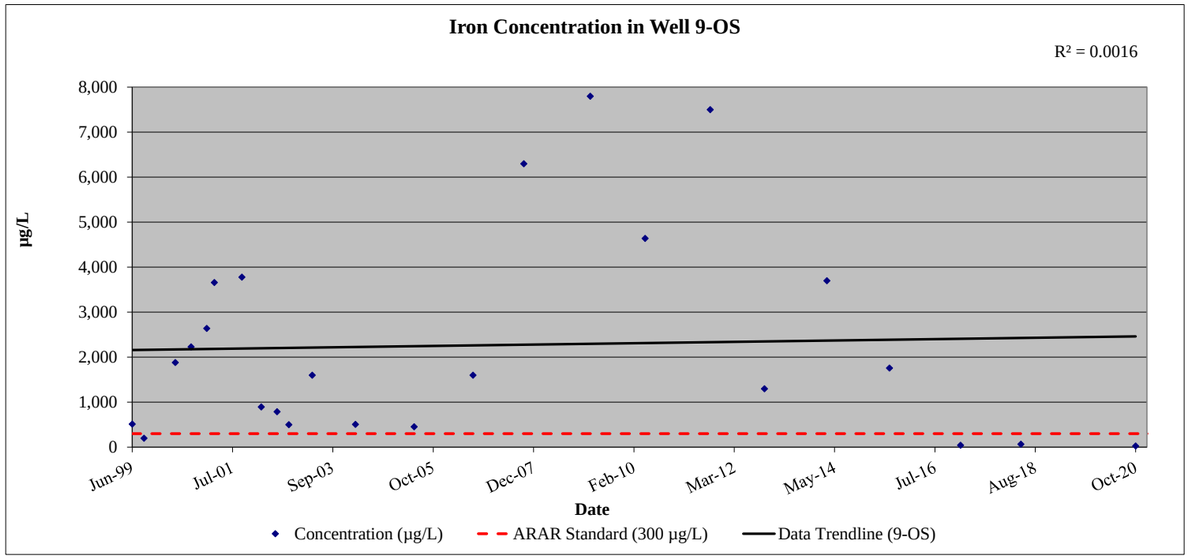








Summary of Historical Groundwater Quality Results - Iron (µg/L)
Town of Ramapo Landfill



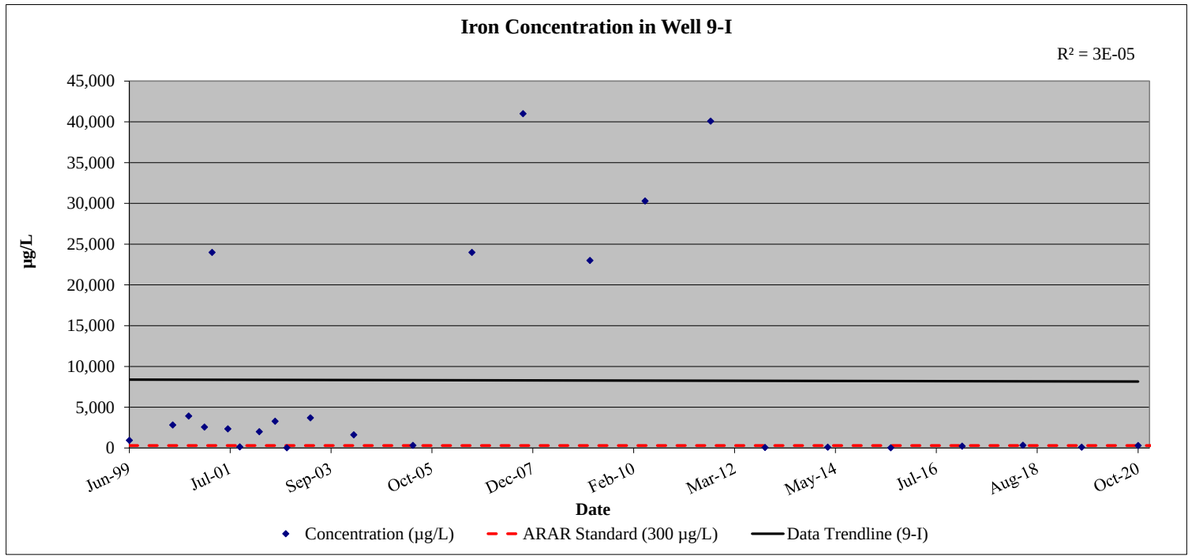


Table 14

Summary of Historical Groundwater Quality Results - Lead (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																															
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	5.5	2.5	ND	ND	ND	NA	NA	NA	NA	NA	NA	2.5	ND	2.7	ND	ND	ND
Sep-99	10.1	ND	4	ND	ND	ND	12.3	ND	NA	ND	ND	4.9	ND	ND	ND	10.8	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	5.8	< 1.5	**38**	< 1.5	< 1.5	1.8 B	2.3 B	< 1.5	5.4	NA	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	1.8 B	2.3 B	NA	NA	NA	NA	NA	NA	6.8	2.3 B	2.3 B	< 1.5	< 1.5	< 1.5
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 3.4	4.8	4.4	2.6 B	1.9 B	< 1.7	NA	NA	NA	NA	NA	NA	8.9	5.1	2.8 B	2.5 B	< 1.7	2 B
Dec-00	6.6	< 1.7	**32.2**	< 1.7	< 1.7	2 B	< 1.7	2.4 B	17.6	NA	< 1.7	5.7	< 1.7	< 1.7	3.6	< 1.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.3	< 2	< 2	NA	NA	NA	NA	NA	NA	4.1	NA	NA	NA	NA	NA
Mar-01	14.3	5.1	**45.9**	2.5 B	5.3	4.7	3.2	2.6 B	5.9	NA	3.9	< 2	< 2	< 2	6.8	< 2	< 2	4.6	2.2 B	NA	NA	NA	NA	NA	NA	2.3 B	< 2	< 2	< 2	< 2	< 2
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2	3..3	< 2	6	< 2	< 2	NA	NA	NA	NA	NA	NA	< 2	< 2	< 2	< 2	< 2	< 2
Oct-01	5 B	2.2 B	**25.2**	< 2	< 2	< 2	< 2	< 2	NA	< 2	< 2	7.1	< 2	< 2	< 2	2.2	< 2	< 2	< 2	NA	NA	NA	NA	NA	NA	2.9 B	4 B	NA	NA	NA	NA
Mar-02	8.6	3.3 B	10	4.8 B	< 2.9	< 2.9	< 2.9	< 2.9 N	NA	< 2.9	3 B	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	NA	NA	NA	NA	NA	NA	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	NA	NA	NA	NA	NA	NA	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9	< 2.9
Oct-02	10.3 N	4.8 B,N	**31.3** N	< 2.9 N	3.9 B,N	4.2 B,N	7.1 N	< 2.9	NA	< 2.9 N	< 2.9 N	7.2 N	NA	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N	NA	NA	NA	NA	NA	NA	3.5 B,N	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N
Apr-03	NA	< 2.2	**41.1**	< 2.2	6.7	< 2.2	2.6 B	2.3 B	NA	< 2.2	< 2.2	< 2.2	NA	< 2.2	3.5 B	3 B	< 2.2	< 2.2	< 2.2	NA	NA	NA	NA	NA	NA	5.2	2.3 B	< 2.2	< 2.2	< 2.2	< 2.2
Mar-04	NA	NA	18.3 N	NA	2.2 B	NA	7.7 N	NA	**34** N	NA	NA	12.8	NA	< 1.1	3	< 1.1	< 1.1	< 1.1	< 1.1	NA	NA	NA	NA	NA	NA	4.9	< 1.1	< 1.1	< 1.1	< 1.1	< 1.1
Jun-05	5.8	NA	7.6	NA	3.1	NA	< 1.9	NA	NA	< 1.9	NA	2.5 B	NA	< 1.9	< 1.9	3.5	< 1.9	< 1.9	< 1.9	NA	NA	NA	NA	NA	NA	< 1.9	< 1.9	2 B	< 1.9	< 1.9	< 1.9
Sep-06	**94**	NA	9.1	NA	1.1 J	NA	1.2 J	NA	**67**	NA	NA	6.3	NA	< 5	3.5 J	4 J	1 J	3.5 J	< 5	NA	NA	NA	NA	NA	NA	< 5	2.1 J	< 5	< 5	< 5	< 5
Oct-07	**44**	NA	22	NA	< 5	NA	4.2 J	NA	< 5	NA	NA	< 5	NA	< 5	< 5	< 5	6.1	4.6 J	< 5	NA	NA	NA	NA	NA	NA	< 5	< 5	< 5	< 5	< 5	< 5
Mar-09	6.3 J	NA	5.7 J	NA	< 10	NA	< 10	NA	12	NA	NA	< 10	NA	< 10	< 10	< 10	< 10	< 10	< 10	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	< 10	< 10
May-10	18.3	NA	4.9 J	NA	< 5	NA	< 5	NA	23.3	NA	NA	6	NA	< 5	< 5	< 5	< 5	3.6 J	< 5	NA	NA	NA	NA	NA	NA	< 5	< 5	< 5	NA	< 5	< 5
Sep-11	**43**	3.2 J	4.6 J	< 5	< 5	5.3	< 5	NA	16	< 5	**19**	6.9	NA	< 5	< 5	< 5	5	14	< 5	NA	NA	NA	NA	NA	NA	5.6	< 5	< 5	< 5	NA	NA
Nov-12	20	NA	< 5	NA	< 5	NA	< 5	NA	11	NA	NA	3.3 J	NA	< 5	< 5	< 5	< 5	< 5	< 5	NA	NA	NA	NA	NA	NA	**17**	< 5	< 5	< 5	< 5	NA
Mar-14	25	NA	4.9 J	NA	ND	NA	ND	NA	7.8	NA	NA	9.4	NA	ND	ND	ND	3.5 J	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.4	<3.4	<3.4	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	10.55	NA	1.1	NA	0.1 U	NA	0.7 J	NA	4	NA	NA	1.3	NA	0.1 U	0.1 U	0.1 U	1.6	0.1 U	0.2 J	0.2 J	0.7 J	0.1 U	NA	NA	NA	7.83	0.41 J	0.2 U	0.78 J	0.26 J	0.49 J
Jan-17	2.6	NA	0.6 J	NA	0.3 U	NA	0.3 U	NA	NA	NA	NA	0.3 U	NA	0.3 U	0.3 U	0.5 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 J	0.3 U	0.3 U	0.3 U	4.2	0.9 J	0.3 U	0.3 U	0.3 U	0.4 J
May-18	1.0 U	NA	0.51 J	NA	1.0 U	NA	1.0 U	NA	NA	NA	NA	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.63	1.0 U	1.0 U	0.58 J	1.0 U	0.84 J	1.0 U	5.09	3.94	1.0 U	1.0 U	0.38 J	1.0 U
Jul-19	2.3	NA	2.69	NA	1.1	NA	1.0 U	NA	NA	NA	NA	0.6 J	NA	0.3 U	0.3 U	0.3 J	14.7 U	0.3 U	0.34 U	0.3 U	0.3 U	3.95	1.0 J	0.34 U	0.3 U	0.53 J	5.13	0.3 U	0.3 U	0.34 U	0.3 U
Oct-20	3 U	NA	3 U	NA	3 U	NA	3 U	NA	NA	NA	NA	3 U	NA	0.34 U	0.34 U	2.27	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	1.25	0.34 U	0.34 U	0.34 U	0.71 J	0.34 U	0.34 U	0.34 U	0.63 J	0.34 U

Notes:

ARAR Standard = 25 µg/L; USEPA MCL = 15 µg/L; and, PART 5 MCL = Not Available

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions

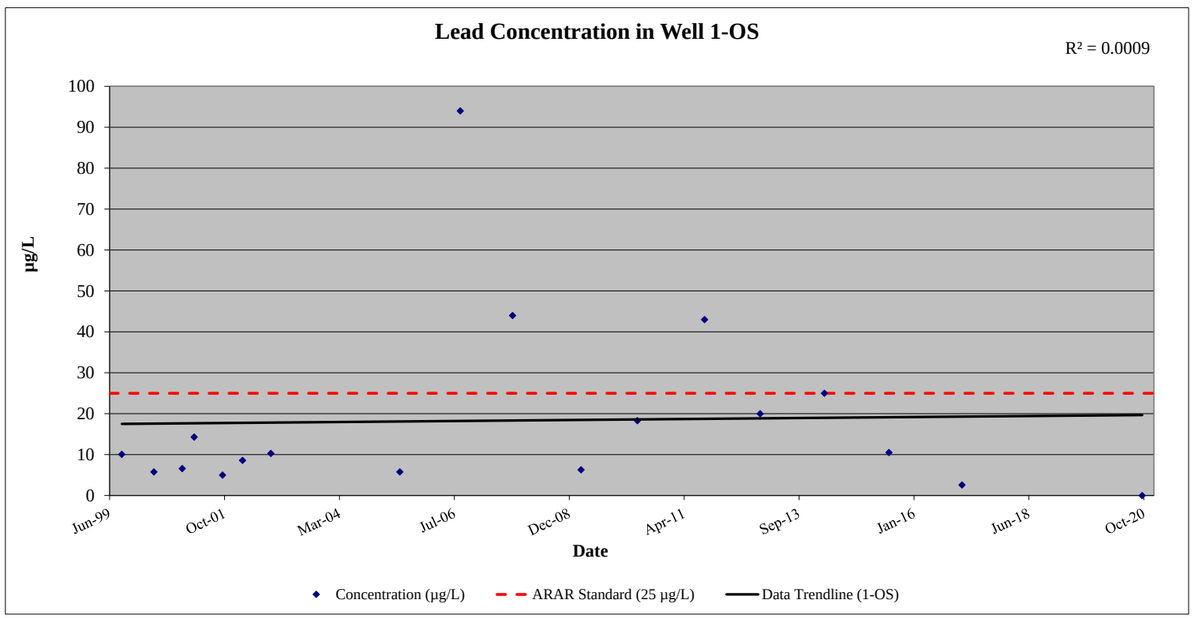
ND or U = Not Detected

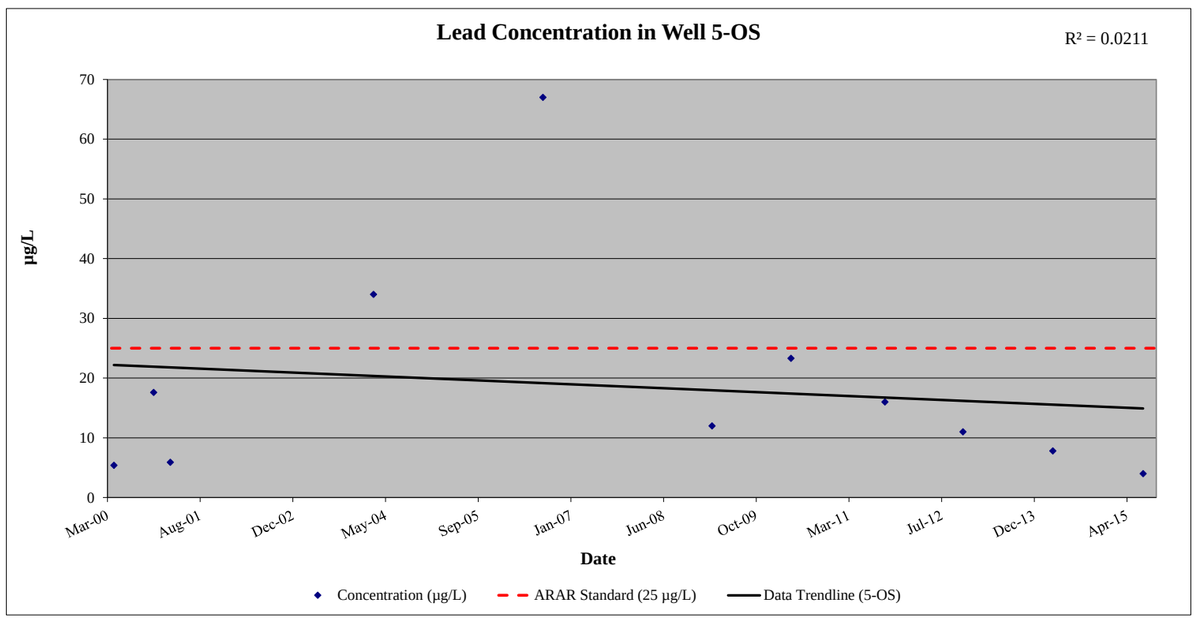
B = The analyte was detected above the reporting limit in the associated method blank.

J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

N = Spiked sample recovery not within control limits.

Summary of Historical Groundwater Quality Results - Lead (µg/L)
Town of Ramapo Landfill





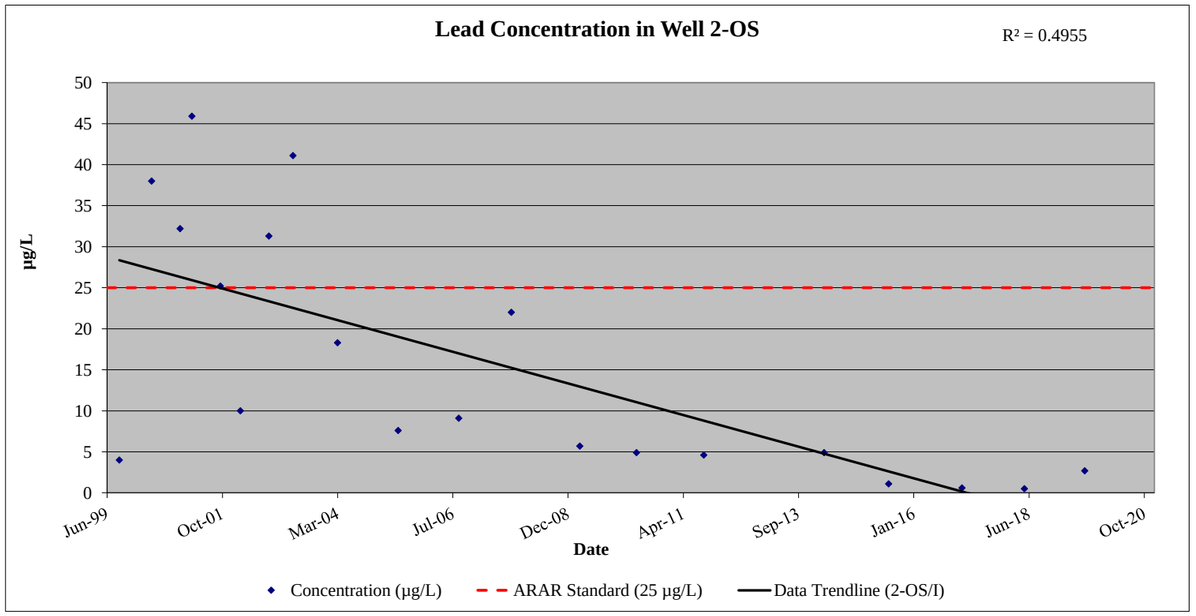


Table 15

Summary of Historical Groundwater Quality Results - Magnesium (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																															
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,470	4,870	32,900	3,110	3,040	3,720	NA	NA	NA	NA	NA	NA	2,290	5,310	4,190	4,940	5,010	5,350
Sep-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	7	NA	NA	NA	NA
May-00	21,700	20,300	27,700	15,500	14,100	24,500	8,310	18,800	10,100	NA	5,850	12,100	17,600	1,490 B	6,100	32,900	1,760 B	2,050 B	6,160	NA	NA	NA	NA	NA	NA	2,780 B	4,260 B	3,780 B	4,400 B	4,990 B	5,330
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-01	24,100	16,200	29,500	12,100	14,800	18,200	6,240	15,800	6,570	NA	4,500 B	13,600	17,800	5,250	30,300	**39,300**	2,090 B	5,640	9,850	NA	NA	NA	NA	NA	NA	2,780 B	4,190 B	6,120	6,360	6,830	5,550
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-02	23,100	6,730	23,500	12,900	16,600	18,000	6,500	14,800	NA	6,670	7,060	12,500	13,900	3,100	17,300	**38,900**	2,160	4,170	8,460	NA	NA	NA	NA	NA	NA	4,340	4,510	8,880	9,230	6,480	7,840
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-03	NA	19,600	25,100	12,900	15,400	18,000	9,080	16,400	NA	5,570	4,740 B	8,230	NA	4,390 B	18,900	**39,500**	1,990 B	2,940 B	7,460	NA	NA	NA	NA	NA	NA	3,960 B	4,000 B	5,060	5,890	5,300	5,480
Mar-04	NA	NA	21,000	NA	13,200	NA	18,500	NA	32,100	NA	NA	11,600	NA	8,750	34,100	**41,000**	1,420 B	1,530 B	5,850	NA	NA	NA	NA	NA	NA	2,680 B	4,230 B	5,900	6,760	5,790	5,230
Jun-05	14,000	NA	15,600	NA	10,700	NA	17,100	NA	NA	4,510 B	NA	11,500	NA	2,950 B	31,000	**43,000**	1,950 B	2,230 B	8,520	NA	NA	NA	NA	NA	NA	5,070	2,320 B	6,170	6,520	6,030	6,250
Sep-06	28,000	NA	18,000	NA	13,000	NA	18,000	NA	**80,000**	NA	NA	9,800	NA	4,200	21,000	**44,000**	2,000	5,100	8,300	NA	NA	NA	NA	NA	NA	2,700	3,200	5,200	5,300	5,100	4,900
Oct-07	30,000	NA	22,000	NA	14,000	NA	20,000	NA	4,600	NA	NA	10,000	NA	5,100	18,000	**39,000**	2,500	7,900	9,300	NA	NA	NA	NA	NA	NA	2,300	2,400	6,100	5,900	6,500	5,800
Mar-09	20,000	NA	18,000	NA	12,000	NA	11,000	NA	21,000	NA	NA	12,000	NA	9,100	16,000	**40,000**	3,300	5,900	11,000	NA	NA	NA	NA	NA	NA	2,800	2,900	5,900	NA	6,700	6,300
May-10	22,600	NA	14,800	NA	11,200	NA	15,000	NA	**36,500**	NA	NA	13,500	NA	5,770	23,600	**40,700**	2,490	6,300	13,700	NA	NA	NA	NA	NA	NA	4,160	3,430	4,560	NA	5,530	5,240
Sep-11	16,200	20,300	14,600	14,700	9,700	16,000	14,600	NA	13,500	5,100	12,800	8,000	NA	4,100	16,900	**41,400**	2,600	7,600	10,000	NA	NA	NA	NA	NA	NA	10,100	2,900	3,800	3,600	NA	NA
Nov-12	14,500	NA	16,100	NA	10,500	NA	12,200	NA	14,700	NA		13,100	NA	4,100	23,300	**42,900**	1,400	1,900	9,000	NA	NA	NA	NA	NA	NA	2,500	3,200	3,900	4,100	6,700	NA
Mar-14	17,600	NA	18,100	NA	12,500	NA	12,400	NA	12,700	NA	NA	14,000	NA	4,600	29,300	**43,300**	2,200	1,600	10,400	NA	NA	NA	NA	NA	NA	2,300	2,500	7,500	8,000	8,200	7,300
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,640	4,380	922	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	13,600	NA	18,800	NA	12,700	NA	17,300	NA	5,710	NA	NA	8,680	NA	4,480	28,100	**41,500**	3,350	2,490	13,200	568	2,860	2,270	NA	NA	NA	4,600	3,400	5,500	5,400	5,200	6,900
Jan-17	11,100	NA	17,600	NA	12,400	NA	18,600	NA	NA	NA	NA	9,980	NA	4,980	5,120	**47,400**	2,070	1,530	13,200	618	2,500	1,870	6,770	4,430	3,390	2,390	2,580	7,240	6,380	6,620	7,210
May-18	16,700	NA	16,700	NA	11,300	NA	12,300	NA	NA	NA	NA	10,700	NA	1,300	29,000	**43,000**	1,600	3,460	9,520	711	2,130	2,320	1,260	4,860	3,780	4,740	2,200	4,620	5,360	5,830	6,290
Jul-19	17,400	NA	18,200	NA	10,600	NA	35,900	NA	NA	NA	NA	10,700	NA	11,200	27,800	**45,400**	1,480	1,600	7,500	428	2,720	2,020	8,130	4,580	3,550	3,180	3,260	5,840	6,190	5,520	5,460
Oct-20	14,500	NA	11,200	NA	11,300	NA	18,000	NA	NA	NA	NA	8,950	NA	6,620	18,400	**66,800**	1,460	1,940	10,100	495	2,810	1,970	7,200	4,840	3,770	2,070	3,810	8,060	7,890	7,760	7,070

Notes:

ARAR Guidance Value = 35,000 µg/L; USEPA MCL = Not Available; and, Part 5 MCL = Not Available

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

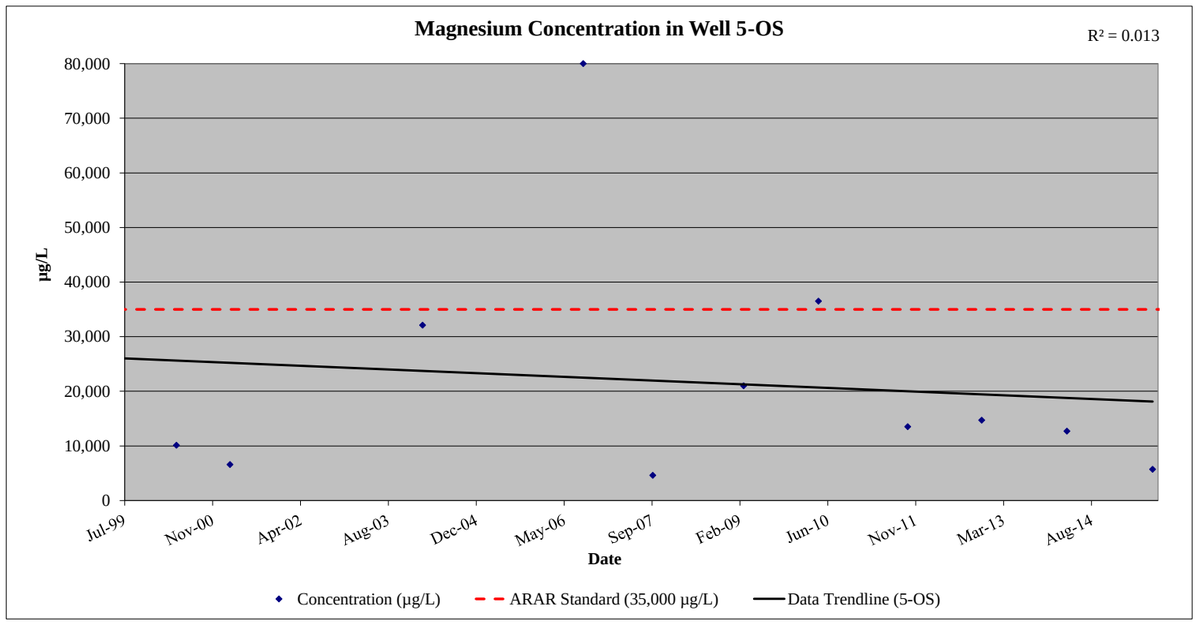
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions

ND or U = Not Detected

B = The analyte was detected above the reporting limit in the associated method blank.

Summary of Historical Groundwater Quality Results - Magnesium (µg/L)
Town of Ramapo Landfill



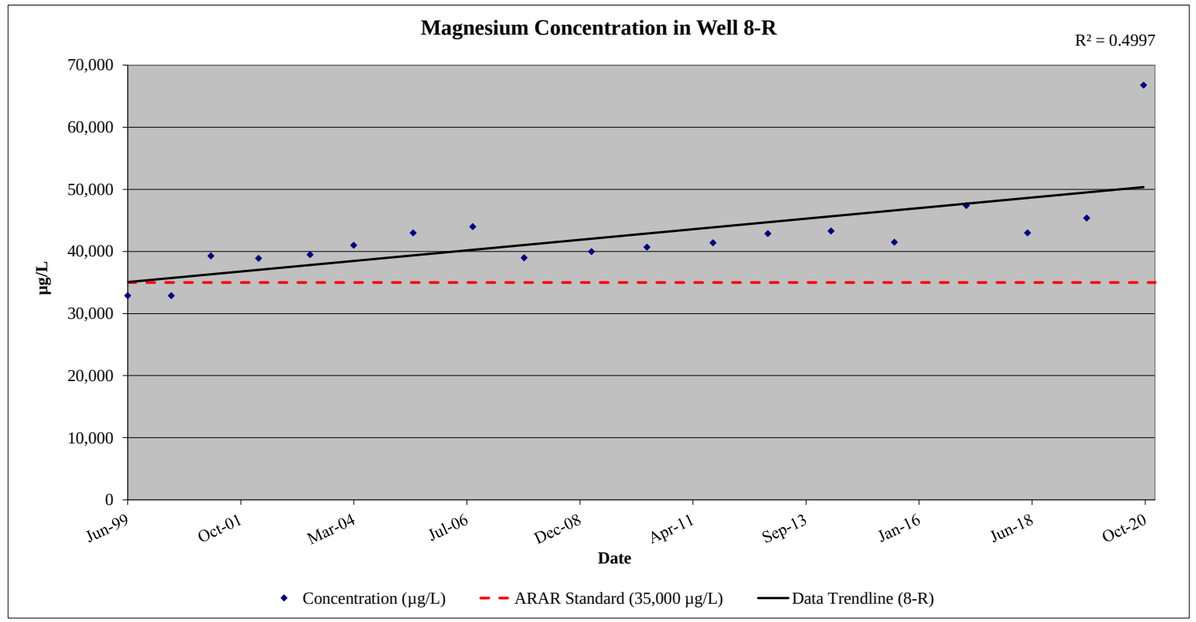


Table 16

Summary of Historical Groundwater Quality Results - Manganese (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1,400**	**1,050**	**1,900**	15	18	**1,620**	NA	NA	NA	NA	NA	NA	2	7	3	4	41	2
Sep-99	**9,830**	**599**	**936**	**744**	**577**	**15,100**	**1,720**	**1,180**	NA	27	1	**755**	**99**	**860**	**1,570**	**2,780**	12	5	**1,320**	NA	NA	NA	NA	NA	NA	ND	ND	NA	NA	NA	NA
May-00	**5,740**	236	**4,110**	**497**	**5,720**	**14,200**	**1,340**	**1,320**	**533**	NA	69	**305**	**257**	**525**	**789**	**2,640**	40	109	**1,500**	NA	NA	NA	NA	NA	NA	1 B	2 B	0 B	4 B	40	< 0.2
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3,820**	**2,810**	**2,390**	55	67	**3,020**	NA	NA	NA	NA	NA	NA	1 B	3 B	2 B	7 B	50	< 0.7
Dec-00	**5,810**	158	**3,370**	247	**5,070**	**13,100**	**1,930**	**1,240**	**1,080**	NA	33	**1,270**	**360**	**2,410**	**2,560**	**2,120**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4 B	< 0.7	10 B	48	< 0.7
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	59	49	**3,100**	NA	NA	NA	NA	NA	NA	1 B	NA	NA	NA	NA	NA
Mar-01	**4,940**	**2,070**	**3,450**	142	**3,750**	**10,400**	**440**	**1,040**	**323**	NA	13 B	**638** N	**379** N	**6,760** N	**3,430**	**2,250** N	93 N	**561** N	**2,860** N	NA	NA	NA	NA	NA	NA	14 B	6 B	2 B	5 B	50	< 0.6
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**5,800**	**2,990** N	**2,640**	< 0.6	38	**2,960**	NA	NA	NA	NA	NA	NA	**4** B	2 B	< 0.6	3 B	143	< 0.6
Oct-01	**5,310**	**909**	**3,830**	106	**2,040**	**12,700**	**839**	**1,070**	NA	3 B	< 2.2	**668**	**375**	**6,340**	**1,760**	**2,060**	78	5 B	**3,080**	NA	NA	NA	NA	NA	NA	NA	< 2.2	5 B	NA	NA	NA	NA
Mar-02	**6,240**	104	**2,300**	**616**	**2,800**	**9,950**	**759**	**1,110**	NA	132	154	**592**	**292**	**1,620**	**3,670**	**1,930**	25	45	**2,490**	NA	NA	NA	NA	NA	NA	< 1.4	6 B	< 1.4	7 B	68	< 1.4
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3,390**	**2,390**	**2,160**	19	76	**2,740**	NA	NA	NA	NA	NA	NA	< 1.9	7 B	< 1.9	5 B	77	< 1.9
Oct-02	**8,160** E	**1,650** E	**6,940** E	**404** E	**13,400** E	**19,400** E	**3,790** E	**953** E	NA	4 B,E	22 E	**1,730** E	NA	**6,950** E	**2,980** E	**1,980** E	11 E	4 B,E	**2,880** E	NA	NA	NA	NA	NA	NA	2 B,E	3 B,E	**7** B	< 1.9	62	3 B
Apr-03	NA	177	**3,100**	157	**24,800**	**12,100**	**620**	**1,180**	NA	64	30	124	NA	**894**	**3,140**	**2,050**	36	52	**2,630**	NA	NA	NA	NA	NA	NA	< 0.8	4 B	< 0.8	6 B	80	< 0.8
Mar-04	NA	NA	**2,300**	NA	**7,200**	NA	**338**	NA	**2,040**	NA	NA	**2,140**	NA	**1,590**	**4,650**	**2,150**	4 B	19	**1,980**	NA	NA	NA	NA	NA	NA	< 0.9	< 0.9	< 0.9	3 B	88	< 0.9
Jun-05	**4,720**	NA	**778**	NA	**6,450**	NA	**700**	NA	NA	14	NA	222	NA	**691**	**3,090**	**2,190**	28	12	**2,730**	NA	NA	NA	NA	NA	NA	< 2.1	< 2.1	< 2.1	7 B	86	< 2.1
Sep-06	**2,800**	NA	**1,900**	NA	**9,200**	NA	**860**	NA	**5,100**	NA	NA	**1,300**	NA	110	**1,900**	**2,200**	51	290	**2,800**	NA	NA	NA	NA	NA	NA	1 J	1 J	1 J	3 J	25 J	< 50
Oct-07	**5,100**	NA	**3,500**	NA	**4,400**	NA	**2,700**	NA	14 J	NA	NA	**920**	NA	**2,000**	**2,200**	**1,900**	140	**560**	**2,900**	NA	NA	NA	NA	NA	NA	< 50	6 J	< 50	4 J	96	< 50
Mar-09	**9,000**	NA	**2,200**	NA	**14,000**	NA	**400**	NA	**1,000**	NA	NA	**450**	NA	**610**	**3,100**	**1,900**	150	290	**3,700**	NA	NA	NA	NA	NA	NA	< 50	2 J	< 50	NA	140	< 50
May-10	**14,800** B	NA	**1,680**	NA	**2,460** B	NA	223	NA	**2,230**	NA	NA	**1,710** B	NA	**399** B	**4,590** B	**1,960** B	90 B	**392** B	**4,030** B	NA	NA	NA	NA	NA	NA	1 J,B	3 B	0 J,B	NA	110 B	22 B
Sep-11	**8,300** B	**1,500** B	**780** B	**530** B	**4,500** B	**41,400** B	160 B	NA	**830** B	26 B	**640** B	**1,200** B	NA	**700** B	**3,500** B	**2,100** B	110 B	**590** B	**2,700** B	NA	NA	NA	NA	NA	NA	2 J,B	2 J,B	2 J,B	2 J,B	NA	NA
Nov-12	**11,600** B	NA	**980** B	NA	**2,800** B	NA	**560** B	NA	**660** B	NA	NA	**1,400** B	NA	280 B	**3,500** B	**2,000** B	19 B	4 B	**2,300** B	NA	NA	NA	NA	NA	NA	1 J,B	3 J,B	1 J,B	1 J,B	200 B	NA
Mar-14	**16,900** B	NA	**1,900** B	NA	**2,900** B	NA	**740** B	NA	**620** B	NA	NA	**1,500**	NA	100 B	**3,300** B	**1,900** B	51	4	**3,100**	NA	NA	NA	NA	NA	NA	2 J	41	ND	ND	130	ND
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26	29	190	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	**12,550**	NA	**363**	NA	271	NA	276	NA	65	NA	NA	173	NA	178	**2,560**	**2,162**	47	32	**4,458**	33	8	16	NA	NA	NA	<2	<2	<2	<2	**1,810**	<2
Jan-17	**2,479**	NA	87	NA	**520**	NA	24	NA	NA	NA	NA	19	NA	66	**1,558**	**263**	2	2	**1,659**	22	1	16	15	11	5	1	1 J	1 J	68	<0.4
May-18	198.8	NA	9.1	NA	**1,121**	NA	34.13	NA	NA	NA	NA	42.18	NA	1.43	**3,720**	**2,422**	1.35	26.18	**2,948**	28.64	3.02	36.08	80.5	159.7	0.98 J	2.38	2.34	0.75 J	1.0 U	42.09	1.0 U
Jul-19	**772.3**	NA	**453.6**	NA	**3,728**	NA	211.90	NA	NA	NA	NA	74.51	NA	**2,318**	**3,198**	**127**	9.03	33.12	**1,450**	24.76	1.06	18.07	39.2	3.4	7.03	1.01	1.71	0.63 J	1.2	43.06	0.5 J
Oct-20	**13,000**	NA	26.0	NA	**1,500**	NA	**463**	NA	NA	NA	NA	**586**	NA	183.5	**3,479**	**577.4**	0.63 J	5.87	**1,137**	20.56	0.47 J	22.64	1.57	5.61	0.77 J	0.49 J	0.49 J	0.44 U	0.75 J	62.70	0.44 U

Notes:

ARAR Standard = 300 µg/L; USEPA Secondary MCL = Not Available; and, Part 5 MCL = 300 µg/L

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions

ND or U = Not Detected

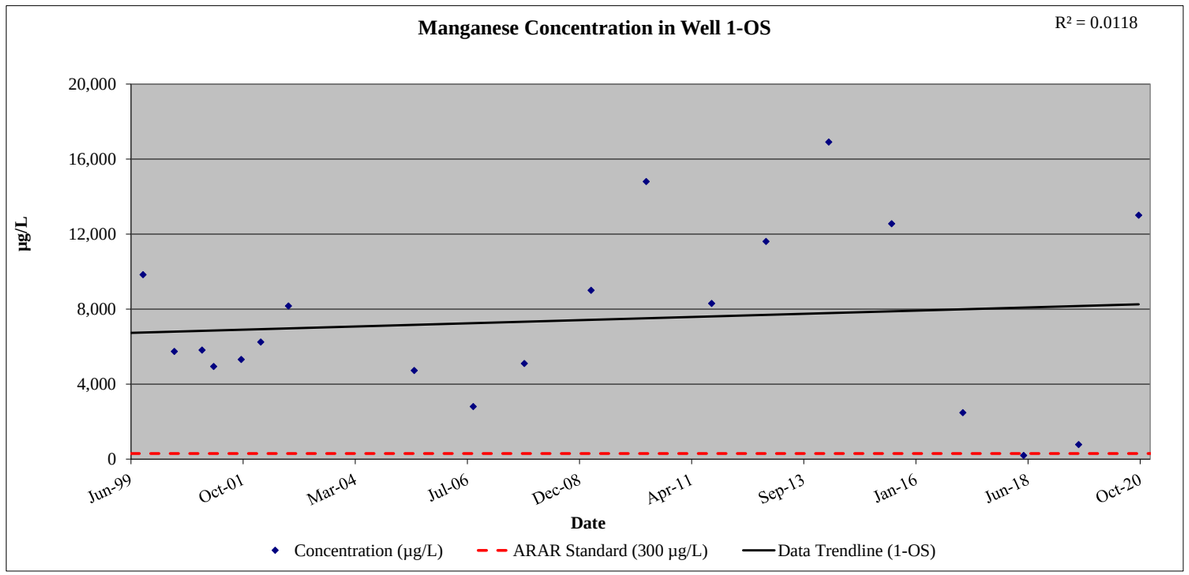
B = The analyte was detected above the reporting limit in the associated method blank.

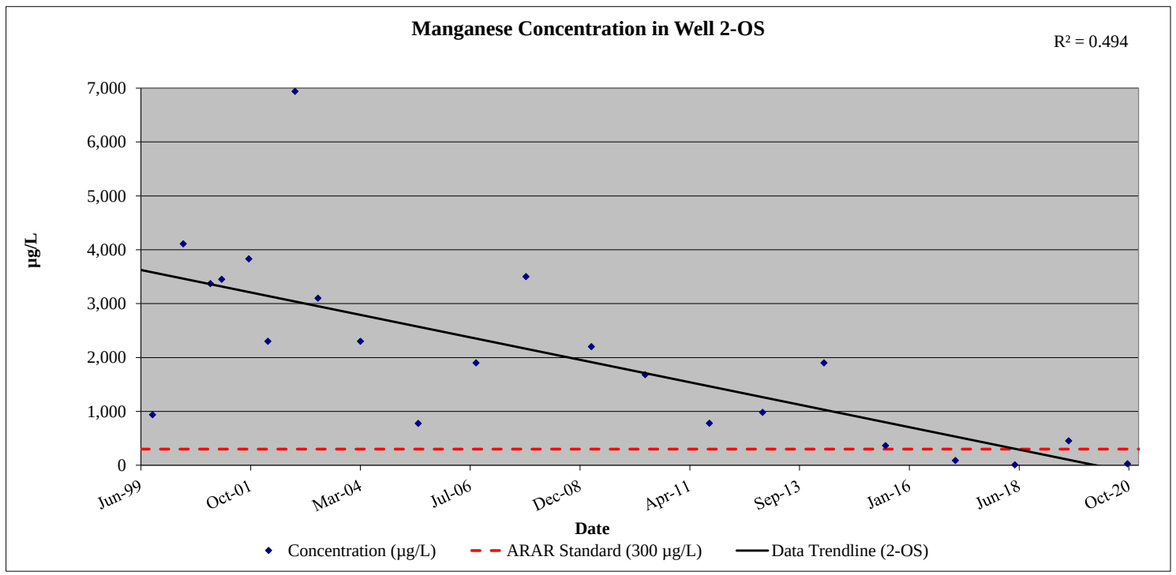
E = Indicates an estimated value because of the possible presence of interference.

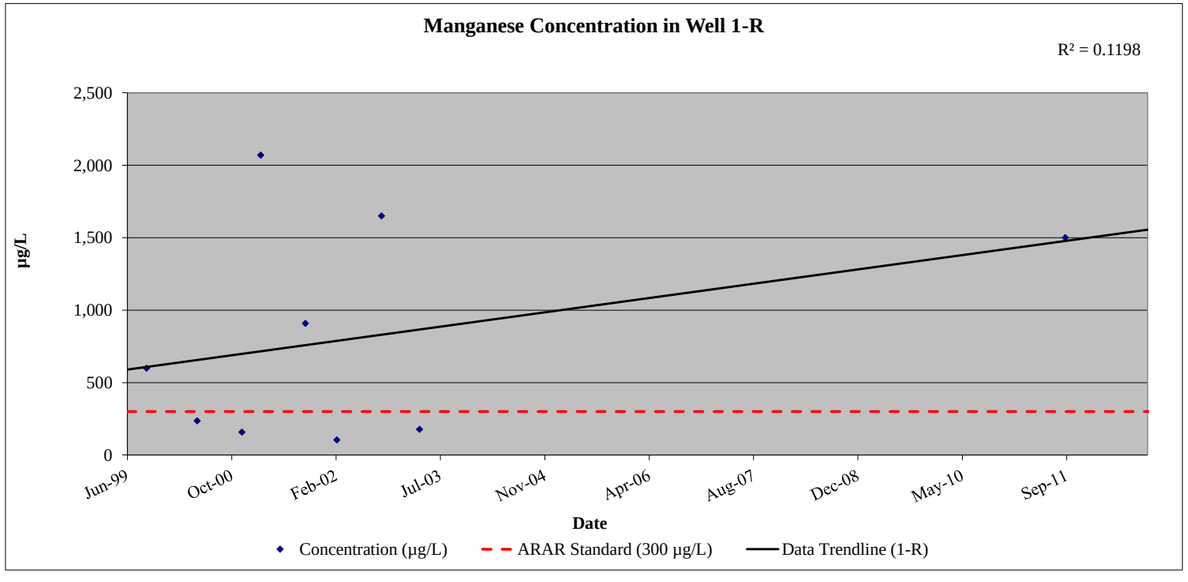
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

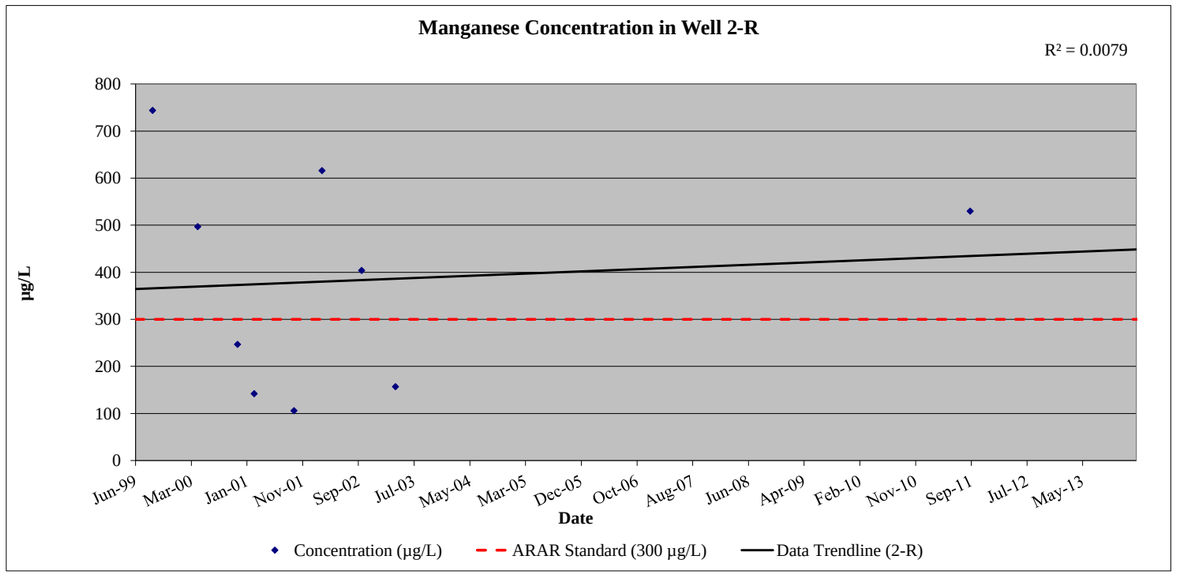
N = Spiked sample recovery not within control limits.

Summary of Historical Groundwater Quality Results - Manganese (µg/L)
Town of Ramapo Landfill

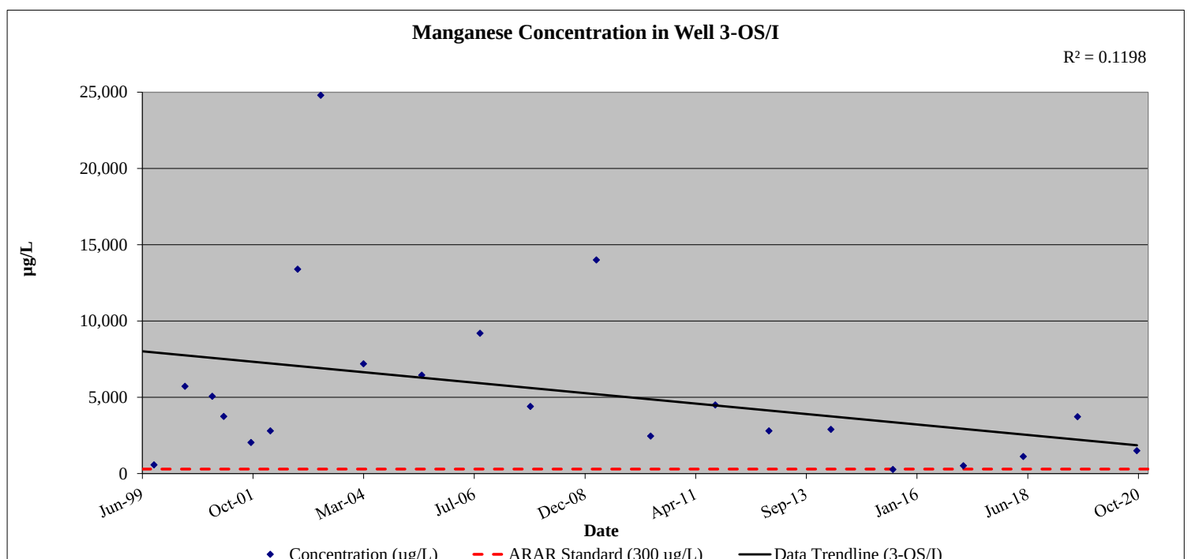


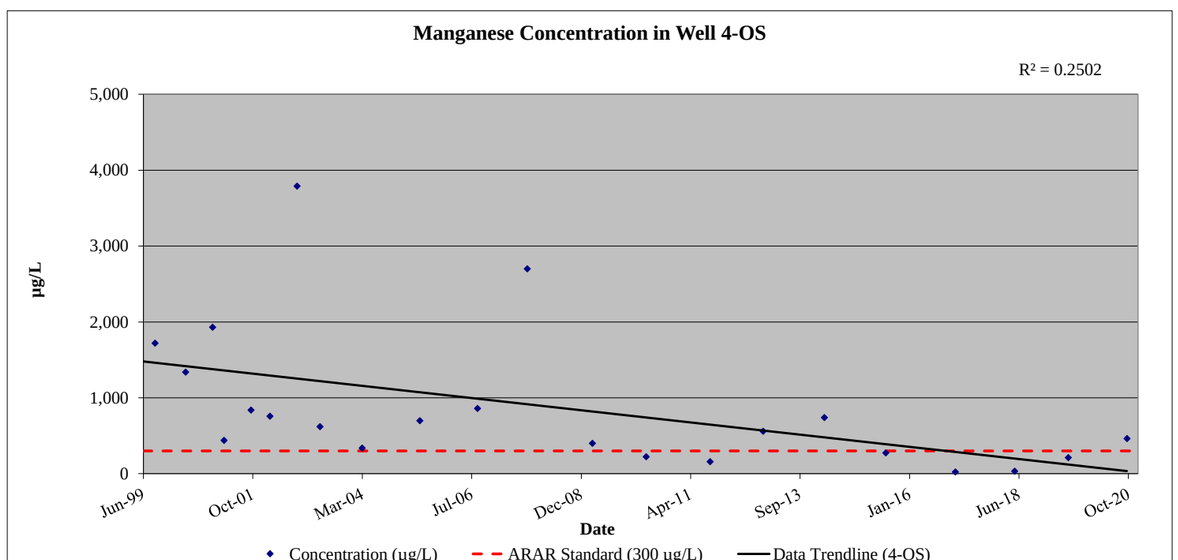


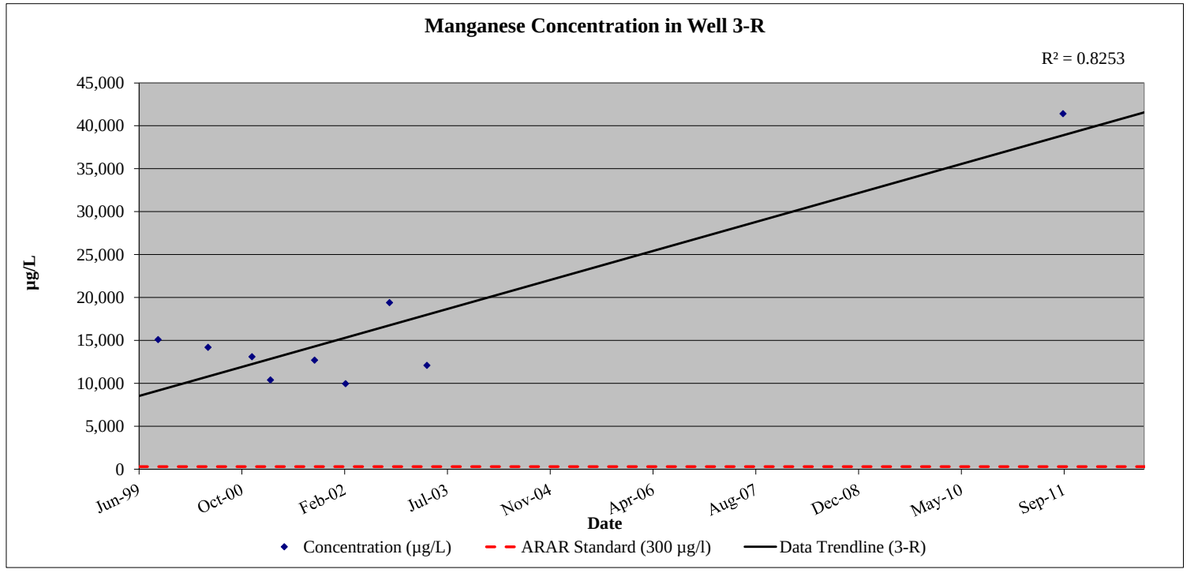


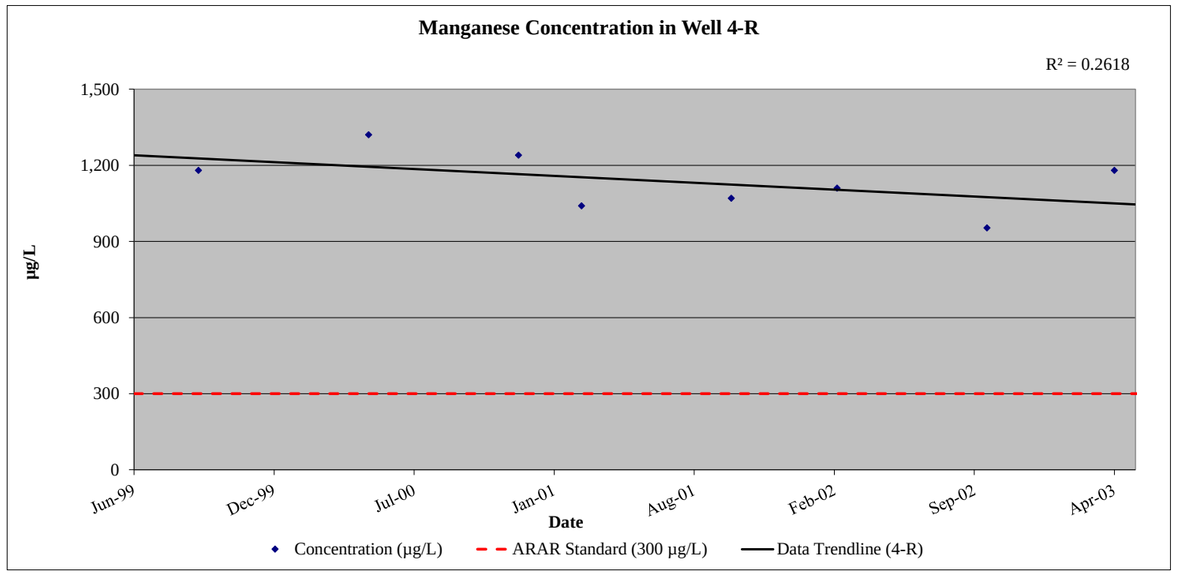


Summary of Historical Groundwater Quality Results - Manganese (µg/L)
Town of Ramapo Landfill

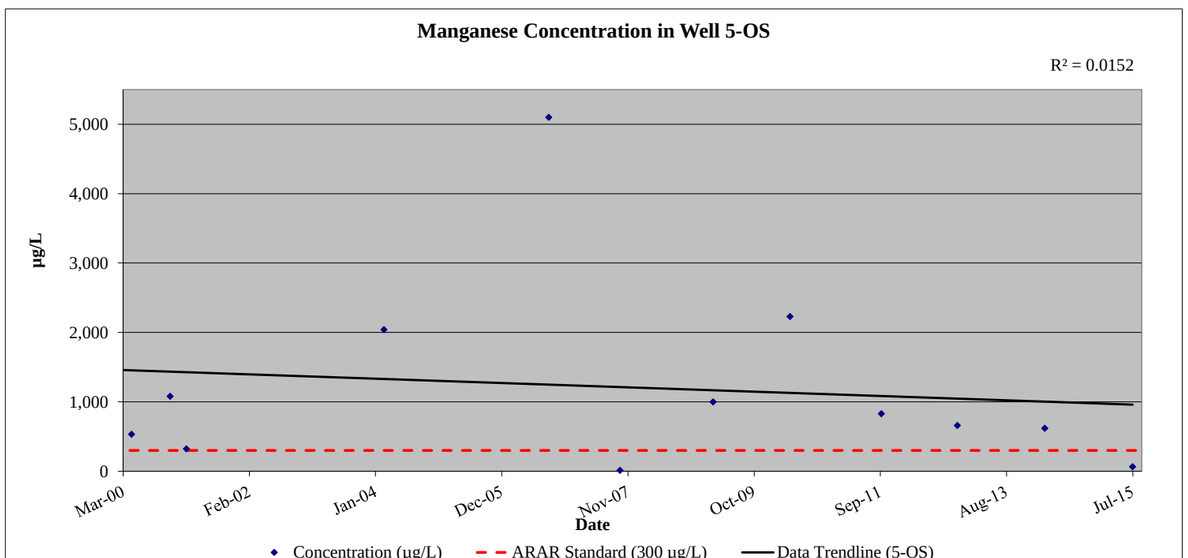


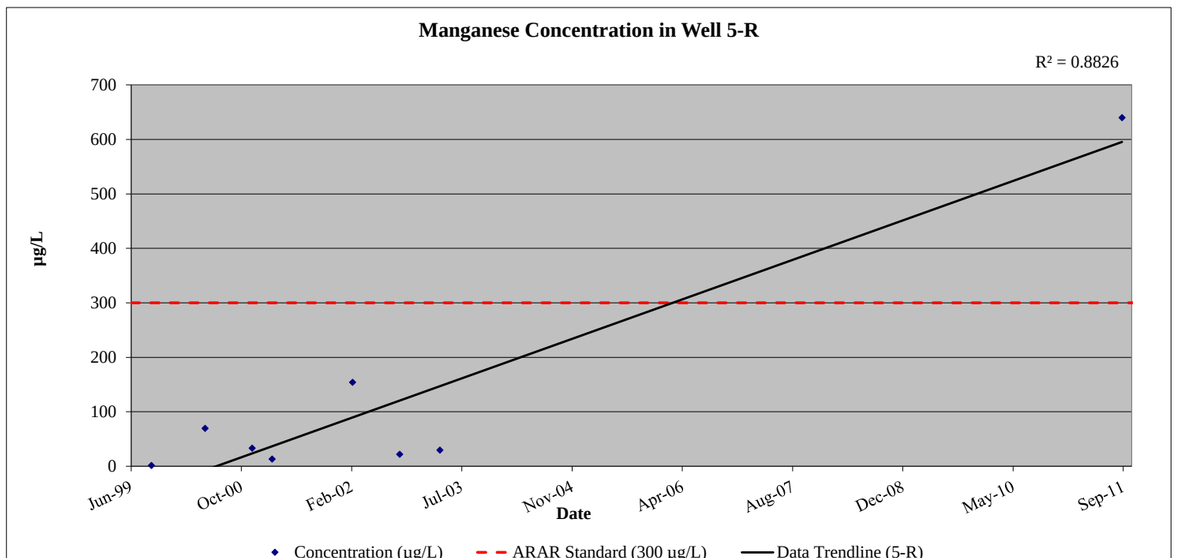


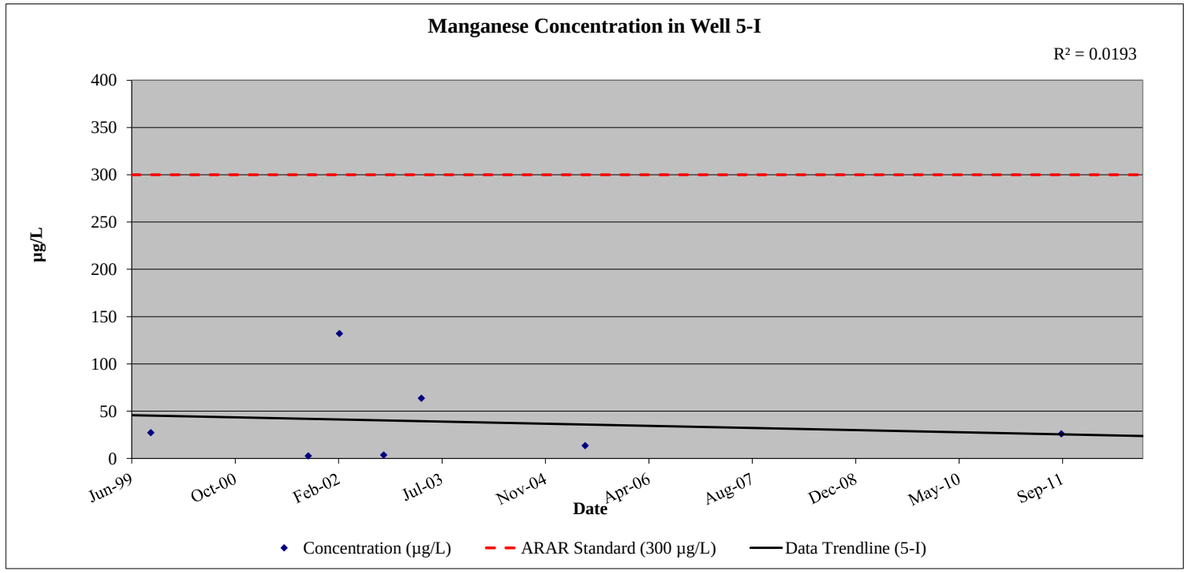


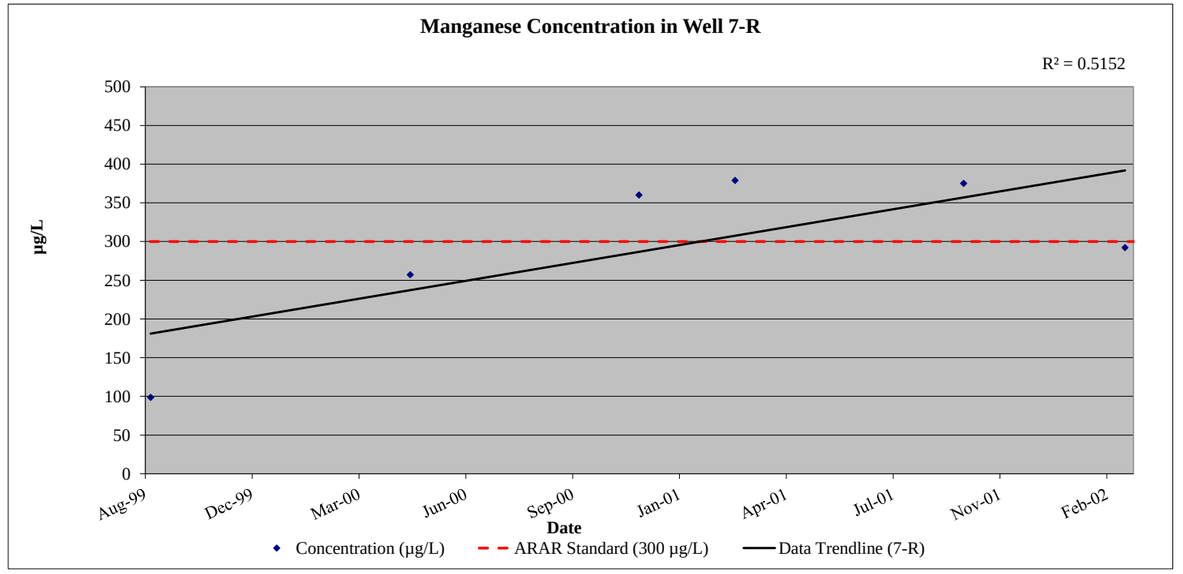


Summary of Historical Groundwater Quality Results - Manganese (µg/L)
Town of Ramapo Landfill

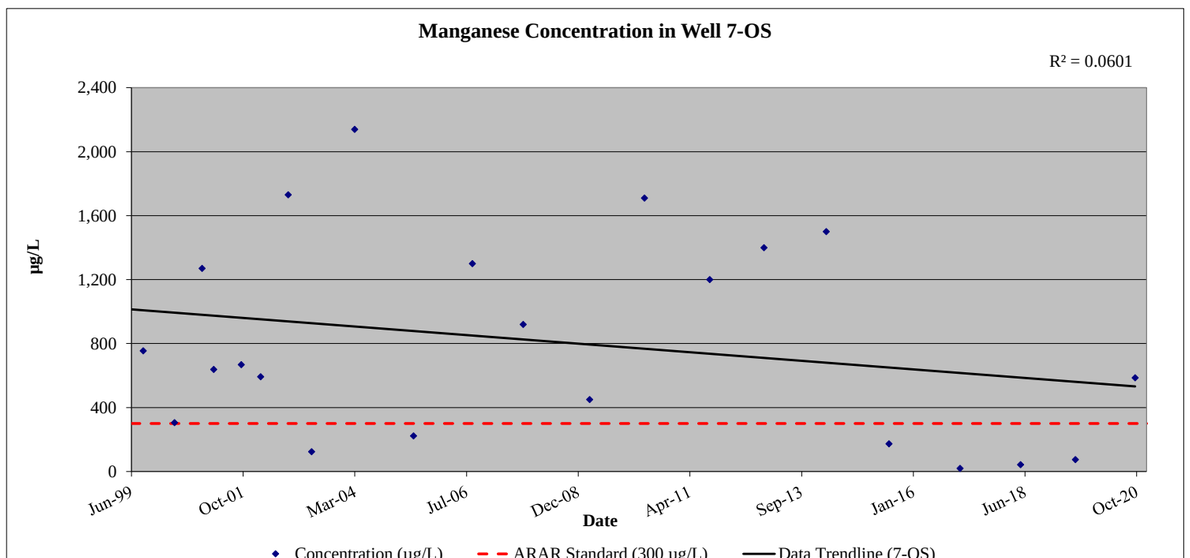


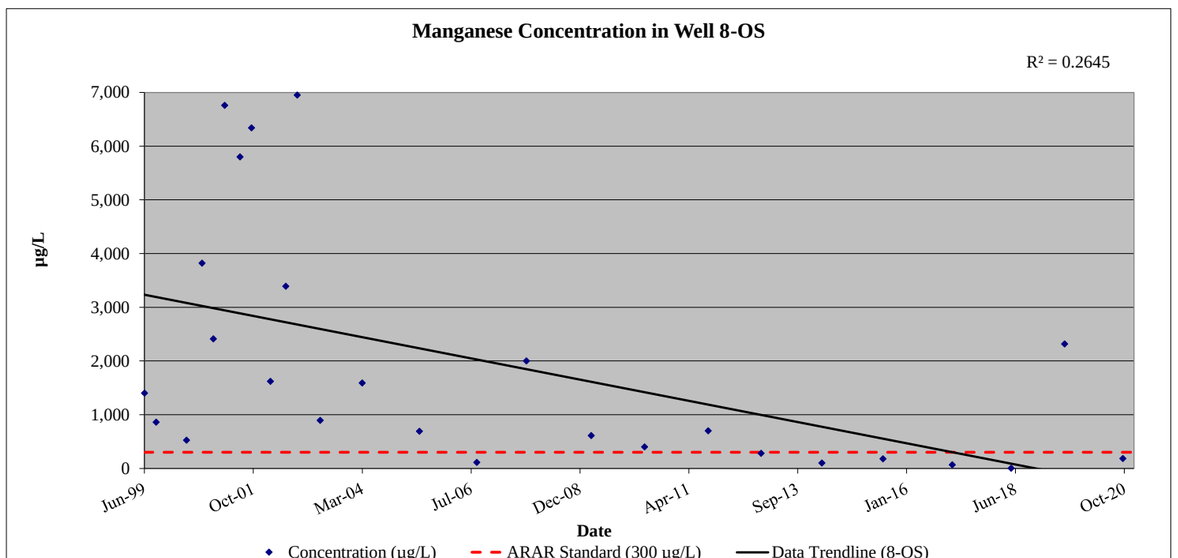


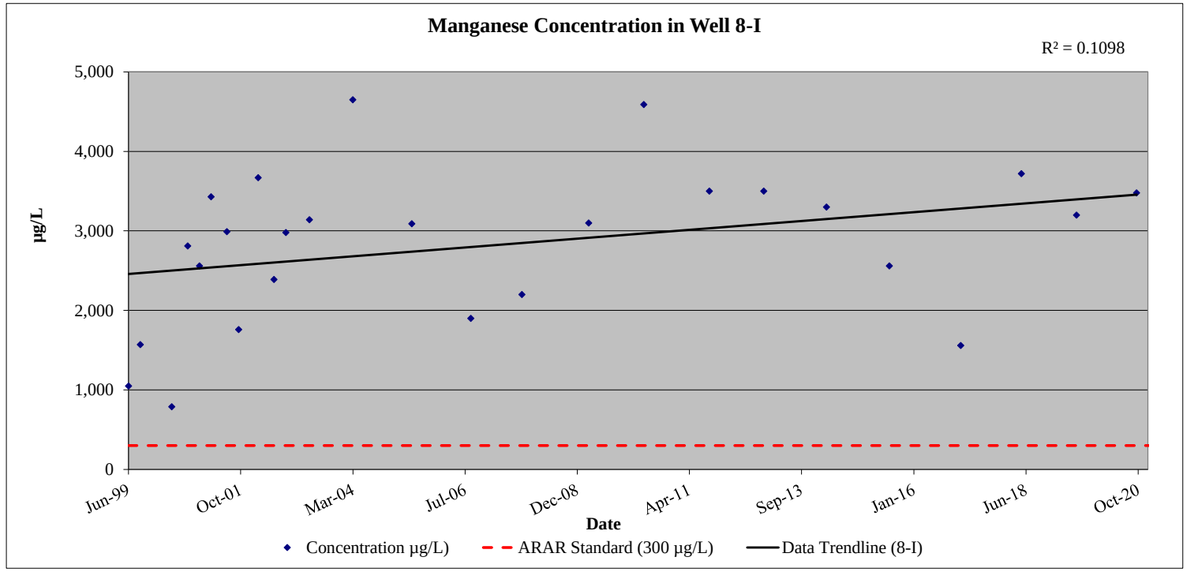


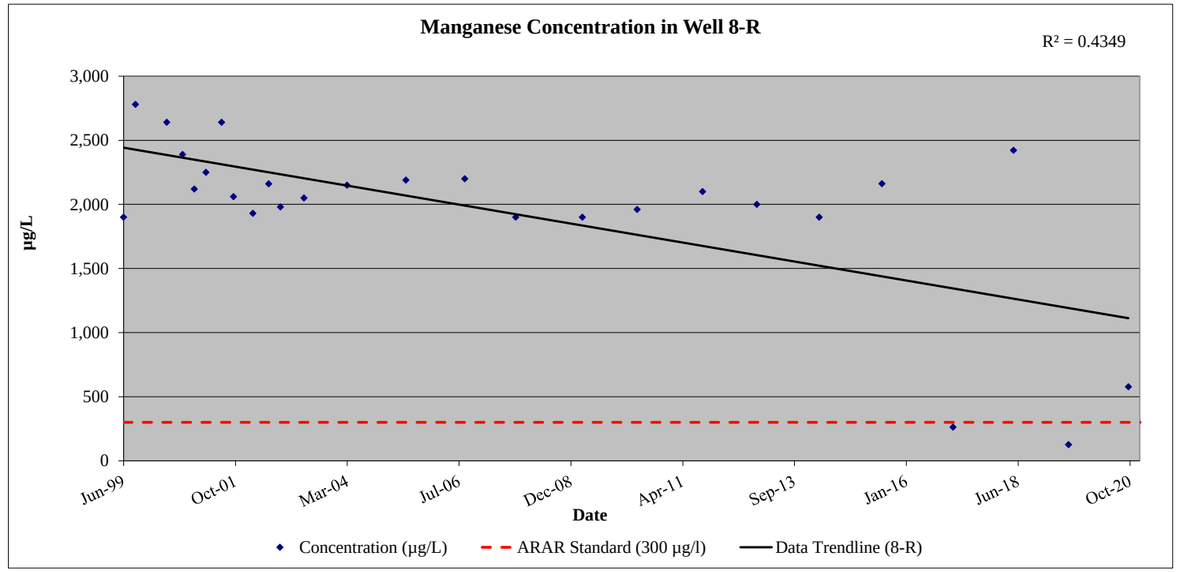


Summary of Historical Groundwater Quality Results - Manganese (µg/L)
Town of Ramapo Landfill

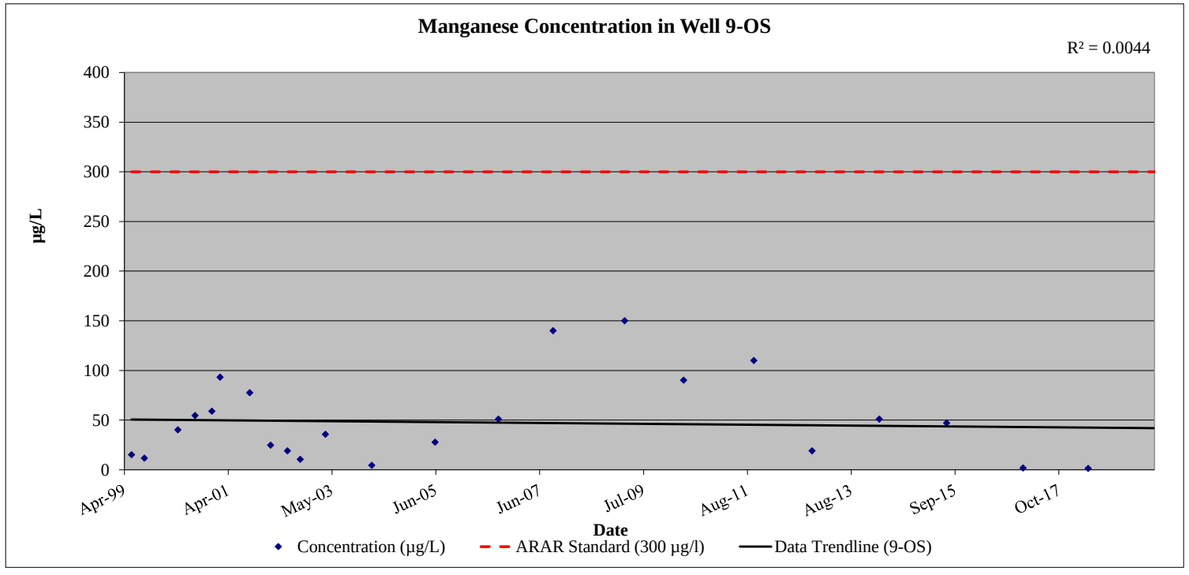


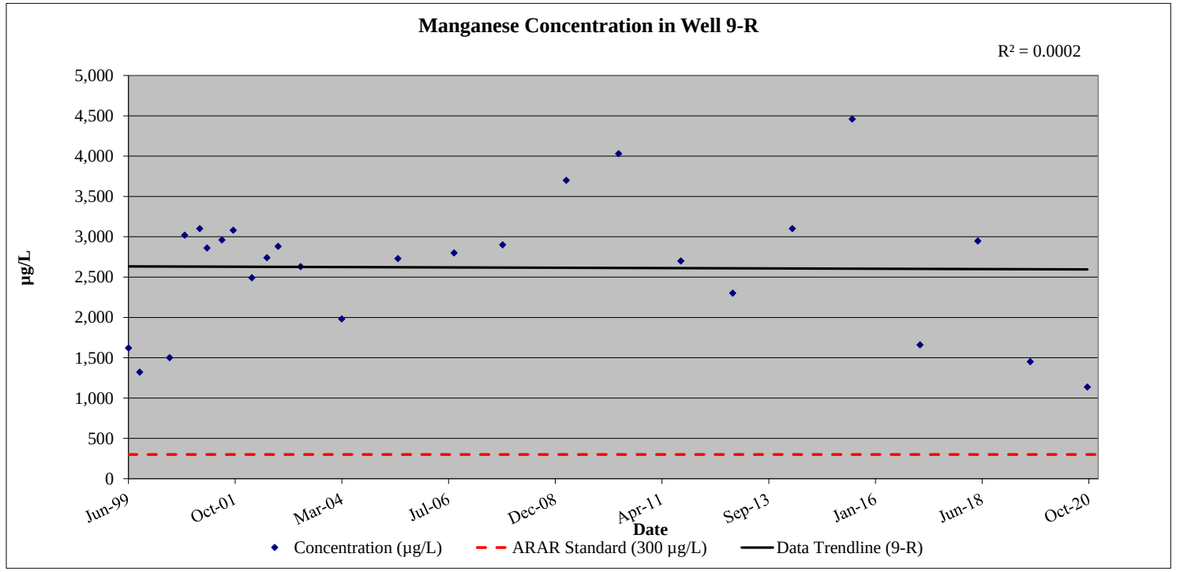


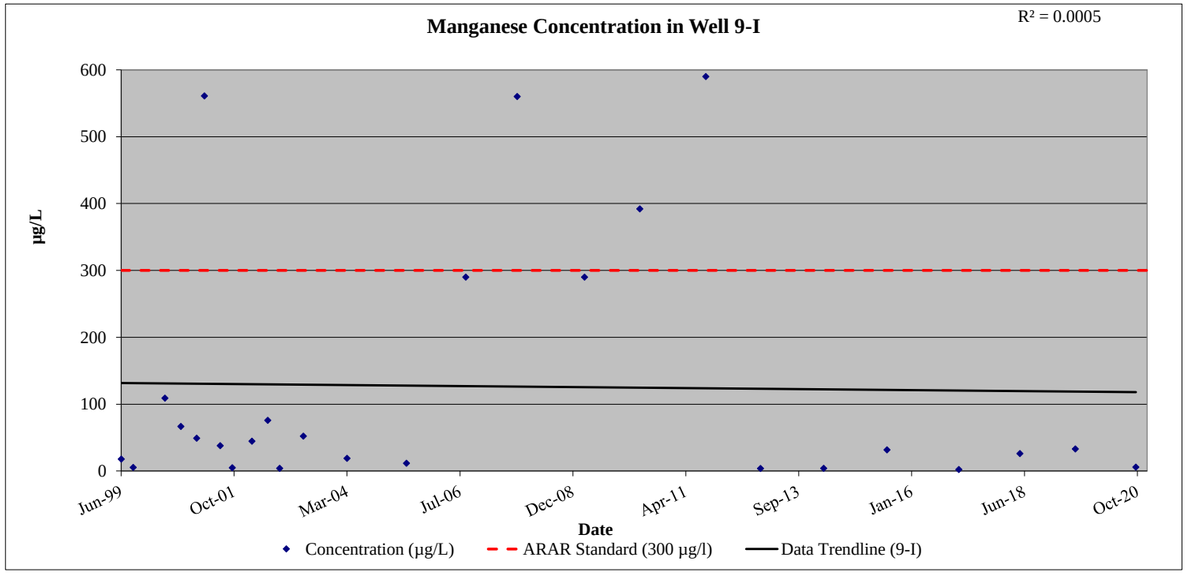




Summary of Historical Groundwater Quality Results - Manganese (µg/L)
Town of Ramapo Landfill







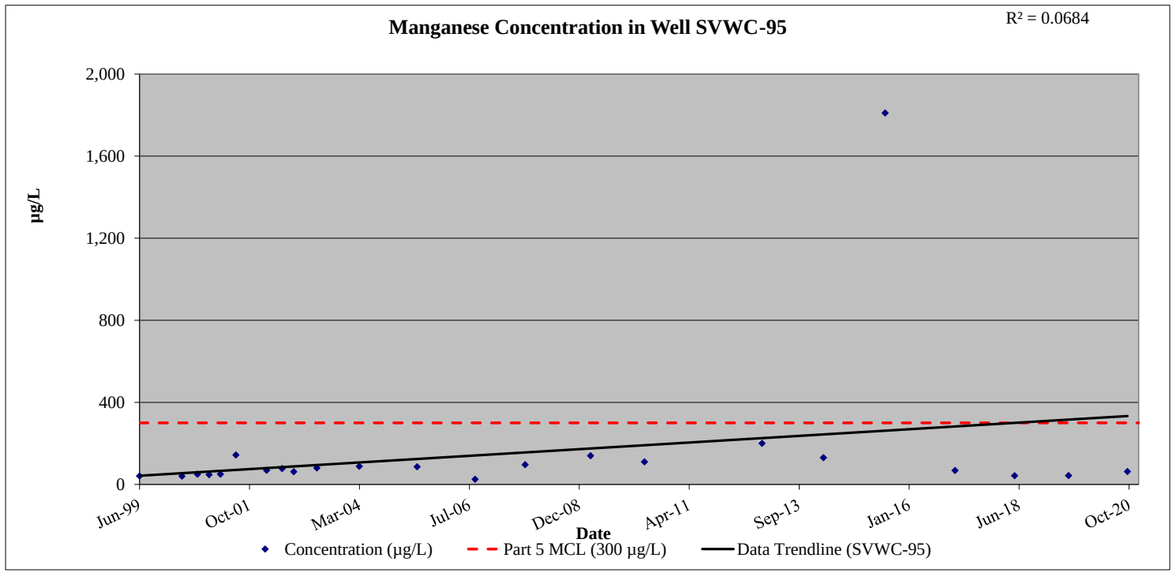


Table 17

Summary of Historical Groundwater Quality Results - Nickel (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.1	34	15.7	ND	2.2	6.6	NA	NA	NA	NA	NA	NA	1.1	1.2	2.7	4.1	3.3	3.8
Sep-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
May-00	**140**	16.2 B	**215**	4.1 B	**156**	73.7	22.4 B	1.5 B	35 B	NA	8.2 B	9.4 B	1.9 B	2.2 B	5.9 B	16.2 B	2.4 B	4.6 B	3.7 B	NA	NA	NA	NA	NA	NA	< 1.1	< 1.1	2.6 B	< 1.1	< 1.1	1.3 B
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-01	82.4	27.7 B	**116**	< 1.7	68.7	28.2 B	8.8 B	1.9 B	19.5 B	NA	2.3 B	10.3 B	2.2 B	19.4 B	40.4	22.6 B	4.7 B	18.2 B	5.7 B	NA	NA	NA	NA	NA	NA	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-02	28.8 B	38.2 B	34.9 B	9.5 B	**128**	8.6 B	5.4 B	< 2.8	NA	5 B	11.7 B	8.6 B	< 2.8	11.1 B	7 B	20.9 B	< 2.8	< 2.8	< 2.8	NA	NA	NA	NA	NA	NA	< 2.8	< 2.8	< 2.8	< 2.8	< 2.8	< 2.8
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-03	NA	2.2 B	**108**	3.9 B	**932**	5.1 B	14.8 B	< 1.9	NA	2.7 B	2.1 B	3.5 B	NA	6.8 B	14.3 B	15 B	< 1.9	< 2.7 B	< 1.9	NA	NA	NA	NA	NA	NA	< 1.9	< 1.9	< 1.9	< 1.9	2.9 B	< 1.9
Mar-04	NA	NA	56.8	NA	**434**	NA	7.3 B	NA	**132** E	NA	NA	41.8	NA	7.9 B	29.4 B	15 B	< 1.7	< 1.7	< 1.7	NA	NA	NA	NA	NA	NA	< 1.7	< 1.7	42.7	< 1.7	1.9 B	< 1.7
Jun-05	9.2 B	NA	52.1	NA	**1,460**	NA	87.8	NA	NA	< 2.3	NA	< 2.3	NA	61.9	15.6 B	11.5 B	< 2.3	< 2.3	< 2.3	NA	NA	NA	NA	NA	NA	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3
Sep-06	**270**	NA	80	NA	**1,300**	NA	40 J	NA	**370**	NA	NA	26 J	NA	5.8 J	20 J	36 J	6.7 J	18 J	1.8 J	NA	NA	NA	NA	NA	NA	50	< 50	< 50	< 50	1.4 J	< 50
Oct-07	**750**	NA	**150**	NA	**730**	NA	68	NA	14 J	NA	NA	26 J	NA	14 J	24 J	15 J	34 J	31 J	3.2 J	NA	NA	NA	NA	NA	NA	< 50	7 J	5.5 J	< 50	1.2 J	< 50
Mar-09	**640**	NA	**490**	NA	**810**	NA	44 J	NA	89	NA	NA	11 J	NA	17 J	18 J	15 J	28 J	19 J	2.5 J	NA	NA	NA	NA	NA	NA	< 50	< 50	< 50	NA	< 50	< 50
May-10	**527**	NA	**236**	NA	**492**	NA	61.5	NA	**147**	NA	NA	28.5	NA	10.3	13.7	10.6	13.4	23.4	3.4 J	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	NA	< 10	7.5 J
Sep-11	**880**	**130**	**410**	4.3 J	**1,600**	**260**	34	NA	56	4.4 J	61	37	NA	28	6 J	10	20	32	2.9 J	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	<10	NA	NA
Nov-12	**180**	NA	**170**	NA	**650**	NA	37	NA	67	NA	NA	29	NA	11	12	10	7.2 J	< 10	2.9 J	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10	< 10	NA
Mar-14	**440**	NA	**240**	NA	**400**	NA	42	NA	47	NA	NA	36	NA	5.9 J	13	11	15	ND	2 J	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	6.7 J
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 4	4.1 J	89.1	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	**405.7**	NA	**152.6**	NA	82.5	NA	37.5	NA	12	NA	NA	7.6	NA	12.9	13.8	14.4	3.4	3.6	3.9	3.6	2.2	14.8	NA	NA	NA	0.5 J	0.6 J	0.54 J	0.9 J	4.99	0.158
Jan-17	**622.5**	NA	**249.7**	NA	**302.9**	NA	59.8	NA	NA	NA	NA	2.8	NA	49	1.6 J	9.8	0.6 U	1.9 J	7.6	0.8 J	1.8 J	69.1	1.4 J	1.5 J	2.5	0.6 U	0.7 J	2	1.3 J	1.8 J	0.7 J
May-18	**166.5**	NA	6.48	NA	**390.8**	NA	23.04	NA	NA	NA	NA	0.98 J	NA	0.88 J	8.57	11.75	2.0 U	2.49	15.83	0.88 J	1.0 J	**101.4**	1.36 J	**154.3**	2.0 U	2.0 U	1.59 J	2.0 U	2.0 U	0.62 J	2.0 U
Jul-19	42.78	NA	3.26	NA	**1,044**	NA	51.96	NA	NA	NA	NA	0.8 J	NA	68.92	8.98	9.17	1.9 J	1.01 J	4.72	0.61 J	0.6 U	13.6	1.95 J	8.31	5.6	0.6 U	1.24 J	0.6 U	0.6 J	0.55 U	0.6 U
Oct-20	50	NA	25 J	NA	**711**	NA	64	NA	NA	NA	NA	11 J	NA	17.66	6.65	22.97	0.55 U	0.77 J	85.11	0.72 J	0.55 U	5.9	0.55 U	10.49	0.93 J	0.55 U	0.55 U	0.55 U	0.6 J	1.07 J	0.59 J

Notes:

ARAR Standard = 100 µg/L; USEPA MCL = Not Available; and, Part 5 MCL = Not Available

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

Laboratory Qualifier Definitions

ND or U = Not Detected

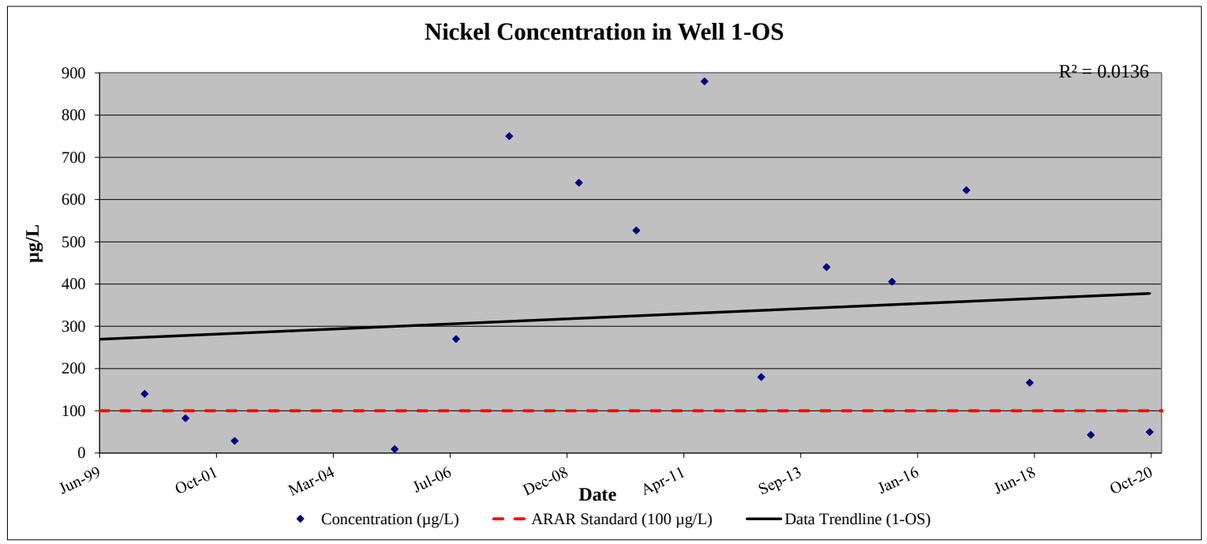
B = The analyte was detected above the reporting limit in the associated method blank.

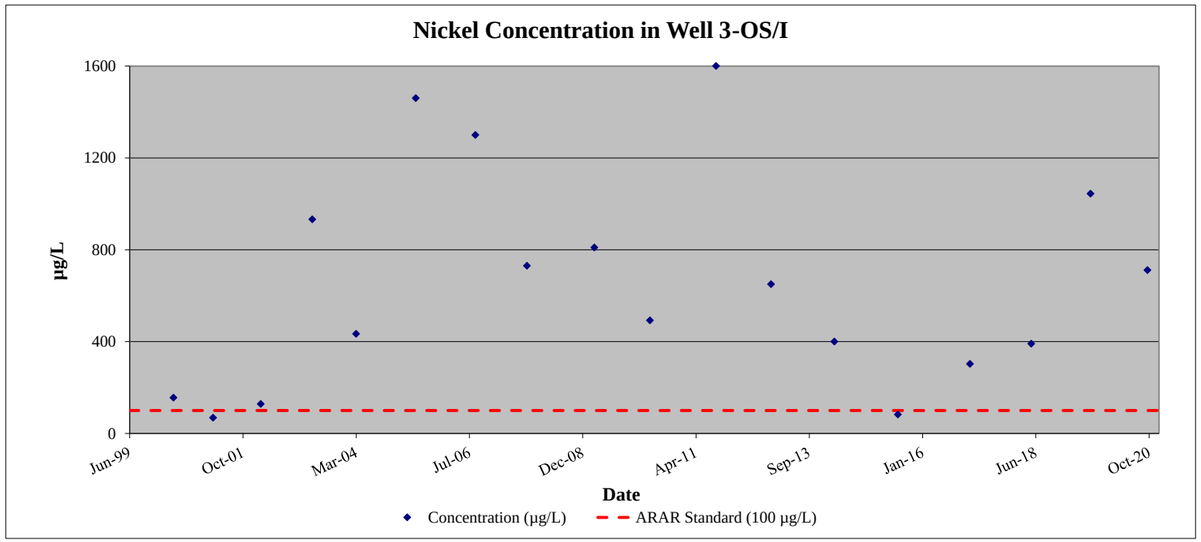
E = Indicates an estimated value because of the possible presence of interference.

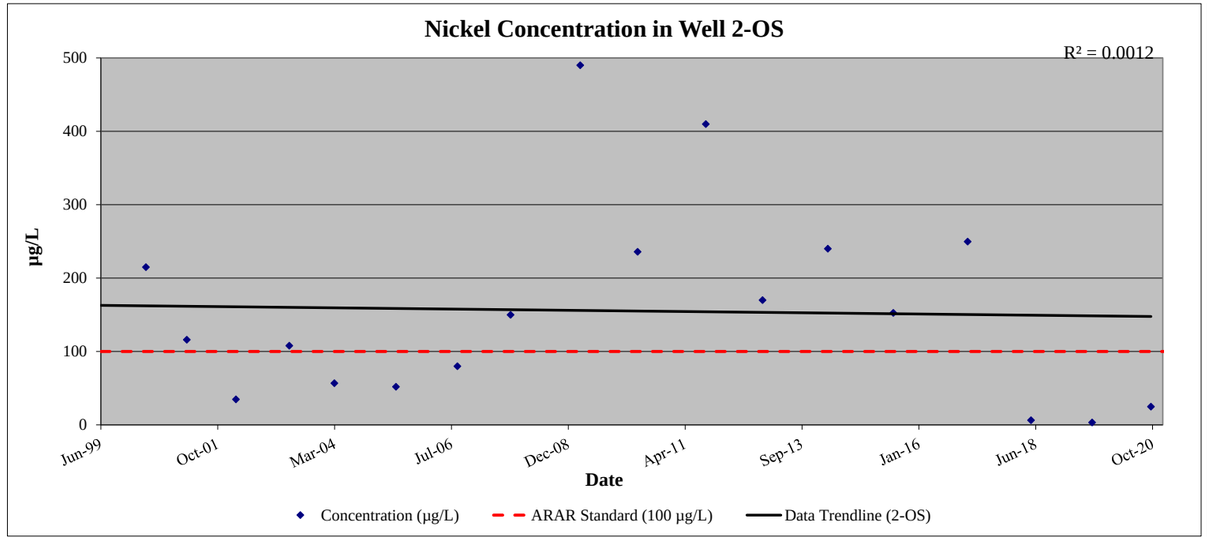
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

Table 17

Summary of Historical Groundwater Quality Results - Nickel (µg/L)
Town of Ramapo Landfill







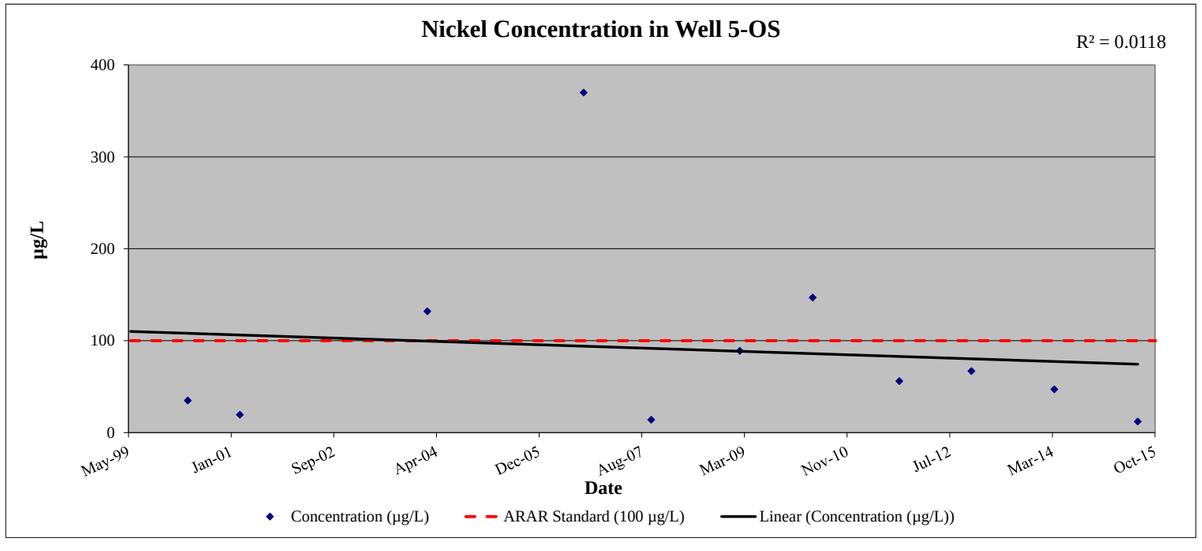


Table 18

Summary of Historical Groundwater Quality Results - Sodium (µg/L)
Town of Ramapo Landfill

Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,980	16,100	**43,400**	5,500	5,610	13,100	NA	NA	NA	NA	NA	NA	4,300	13,200	31,600	33,400	32,900	30,400
Sep-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
May-00	**36,400**	**29,000**	9,960	10,100	**41,600**	**43,300**	**30,500**	13,800	5,530	NA	4,480	19,800	13,900	3,480 B	15,000	**71,100**	5,080	4,400 B	14,300	NA	NA	NA	NA	NA	NA	5,430	9,110	31,400	32,500	28,800	35,900
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-01	**42,100**	19,100	9,460	7,760	**38,700**	**34,900**	**24,100**	13,700	4,770 B	NA	3,740 B	16,900	11,300	14,200	**90,500**	**52,400**	3,670 B	4,950 B	**27,500**	NA	NA	NA	NA	NA	NA	6,130	9,330	36,000	38,700	38,500	35,200
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-02	**47,800**	**69,500**	9,450	7,240	**29,800**	**32,300**	**23,500**	9,780	NA	4,480	4,860	12,500	10,500	5,150	**56,200**	**74,400**	5,120	6,060	**22,200**	NA	NA	NA	NA	NA	NA	7,160	8,720	56,000 E	48,900 E	41,900 E	43,500 E
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-03	NA	**24,200**	7,130	7,670	**31,500**	**38,000**	**26,200**	12,900	NA	4,540 B	4,190 B	13,100	NA	10,900	**46,500**	**52,200**	4,530 B	5,830	**20,600**	NA	NA	NA	NA	NA	NA	8,690	9,000	39,800	43,000	34,700	4,040
Mar-04	NA	NA	11,000	NA	**22,600** E	NA	**54,600**	NA	8,870	NA	NA	5,000 E	NA	17,100 E	**110,000** E	**47,300** E	3,220 B,E	3,690 B	14,600 E	NA	NA	NA	NA	NA	NA	5,410 E	7,730 E	33,800 E	35,600 E	27,700 E	30,100 E
Jun-05	**37,100** E	NA	8,680 E	NA	**29,100** E	NA	**20,300**	NA	NA	2,880 B,E	NA	9,190	NA	8,400	**124,000**	**42,200**	4,160 B	5,530	**22,500**	NA	NA	NA	NA	NA	NA	11,500	5,400	44,100	42,300	41,700	47,400
Sep-06	**62,000**	NA	11,000	NA	**29,000**	NA	**33,000**	NA	14,000	NA	NA	7,000	NA	**28,000**	**73,000**	**46,000**	5	9,400	**28,000**	NA	NA	NA	NA	NA	NA	14,000	7,400	52,000	47,000	36,000	47,000
Oct-07	**76,000**	NA	12,000	NA	**23,000**	NA	**24,000**	NA	4,100	NA	NA	7,700	NA	15,000	**55,000**	**48,000**	7,200	9,800	**35,000**	NA	NA	NA	NA	NA	NA	12,000	6,100	60,000	52,000	53,000	56,000
Mar-09	**97,000**	NA	11,000	NA	**36,000**	NA	**48,000**	NA	8,100	NA	NA	9,700	NA	**41,000**	**50,000**	**42,000**	8,300	15,000	**44,000**	NA	NA	NA	NA	NA	NA	12,000	7,400	52,000	NA	49,000	54,000
May-10	**111,000**	NA	9,300	NA	**36,900**	NA	**47,900**	NA	8,000	NA	NA	11,700	NA	**30,700**	**75,600**	**41,400**	8,200	14,200	**59,300**	NA	NA	NA	NA	NA	NA	18,600	8,600	41,600	NA	47,200	48,600
Sep-11	**101,000**	**23,900** B	10,900	9,700	**57,200**	**59,000**	**60,200**	NA	7,300	4,600	6,200 B	12,500	NA	19,800	**56,800** B	**34,600** B	11,200 B	17,100 B	**48,900** B	NA	NA	NA	NA	NA	NA	68,500 B	6,900 B	45,600 B	40,400 B	NA	NA
Nov-12	**102,000**	NA	13,100	NA	**36,300**	NA	**64,500**	NA	7,300	NA	NA	15,900	NA	10,800	**97,900**	**37,800**	9,800	11,400	**45,500**	NA	NA	NA	NA	NA	NA	32,500	6,800	45,100	45,900	42,500	NA
Mar-14	**117,000** B	NA	10,500 B	NA	**35,300**	NA	**71,900**	NA	7,000	NA		14,900	NA	**24,500** B	**91,800** B	**37,800**	5,500	13,000	**37,600**	NA	NA	NA	NA	NA	NA	25,600 B	7,200	54,100 B	50,100 B	48,600 B	56,100 B
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5,740	17,800	3,220	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	**118,000**	NA	15,100	NA	**20,500**	NA	**35,600**	NA	4,090	NA	NA	15,800	NA	**31,000**	**122,000**	**42,800**	9,770	9,960	**47,200**	2,150	4,210	6,950	NA	NA	NA	35,000	7,900	58,000	66,000	61,000	64,000
Jan-17	**103,000**	NA	14,000	NA	**25,900**	NA	**84,700**	NA	NA	NA	NA	14,600	NA	18,000	**29,200**	**39,700**	5,810	19,300	**50,400**	2,230	3,780	5,520	3,580	3,820	4,030	19,800	6,410	63,000	56,400	56,100	59,700
May-18	**73,300**	NA	**34,700**	NA	**29,900**	NA	**67,100**	NA	NA	NA	NA	11,100	NA	6,840	**59,400**	**35,900**	4,660	**31,500**	**43,200**	2,560	3,340	5,270	**24,800**	4,060	4,720	40,700	6,370	44,800	49,400	46,000	57,300
Jul-19	**115,000**	NA	**133,000**	NA	**52,100**	NA	**93,500**	NA	NA	NA	NA	14,900	NA	**52,400**	**96,800**	**42,000**	6,700	**9,680**	**39,600**	2,090	3,910	4,410	3,870	3,590	4,380	37,900	7,080	58,200	61,300	55,600	62,900
Oct-20	**112,000**	NA	**24,800**	NA	**60,800**	NA	**51,800**	NA	NA	NA	NA	12,000	NA	**26,300**	**91,400**	**71,500**	6,120	**26,100**	**50,000**	2,300	4,230	4,280	4,060	3,680	4,490	17,600	8,380	80,100	82,900	73,400	74,000

Notes:

ARAR Standard = 20,000 µg/L; USEPA MCL = Not Available; and, Part 5 MCL = (1)

(1) While there is no Part 5 MCL for sodium, people on severely restricted diets should consult with the County Health Department for guidance if the reported sodium concentration is higher than 20,000 mg/L.

Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.

NA = Not Analyzed

< = The compound was analyzed for but not detected at the laboratory detection limit listed.

ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).

MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.

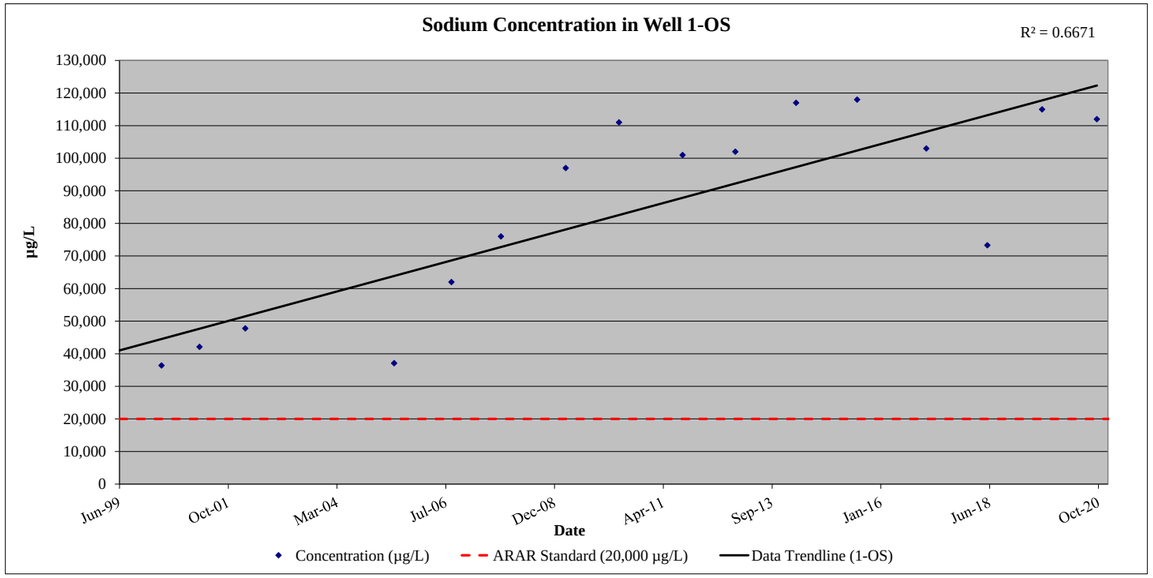
Laboratory Qualifier Definitions

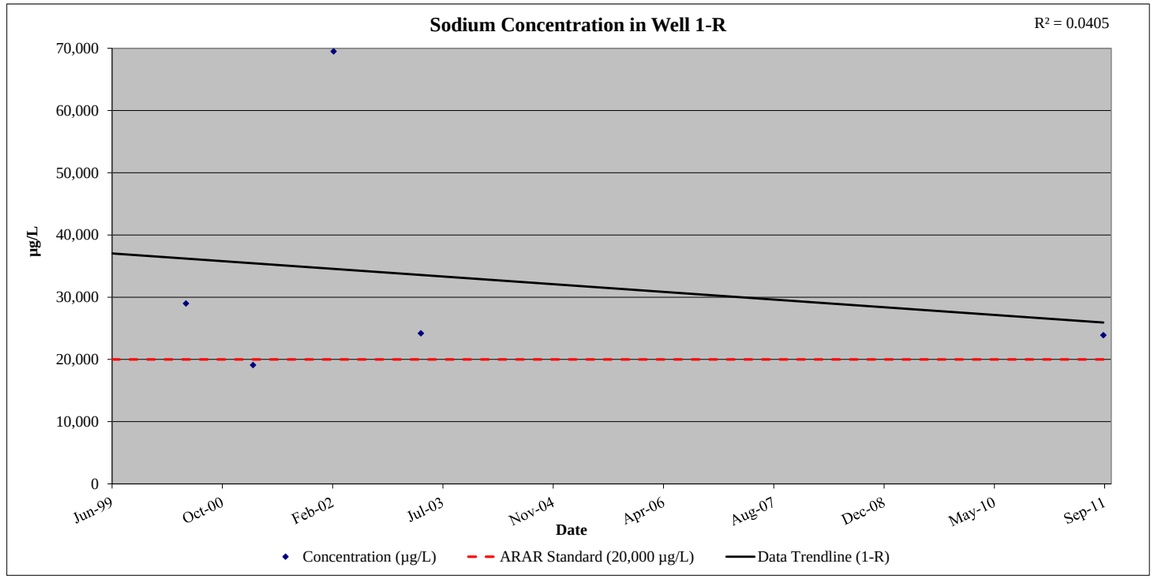
B = The analyte was detected above the reporting limit in the associated method blank.

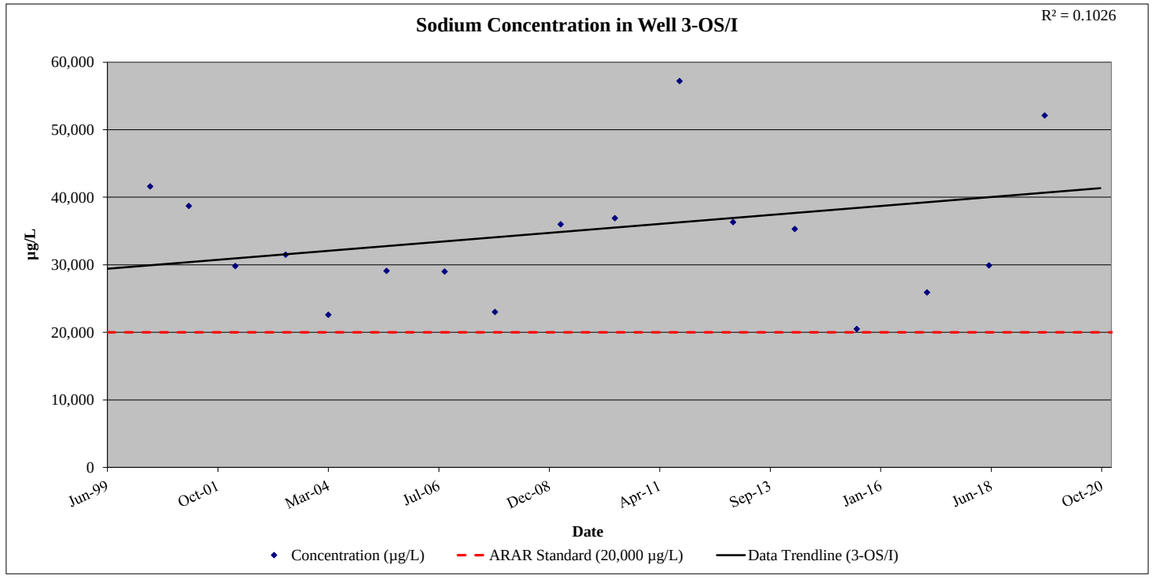
E = Indicates an estimated value because of the possible presence of interference.

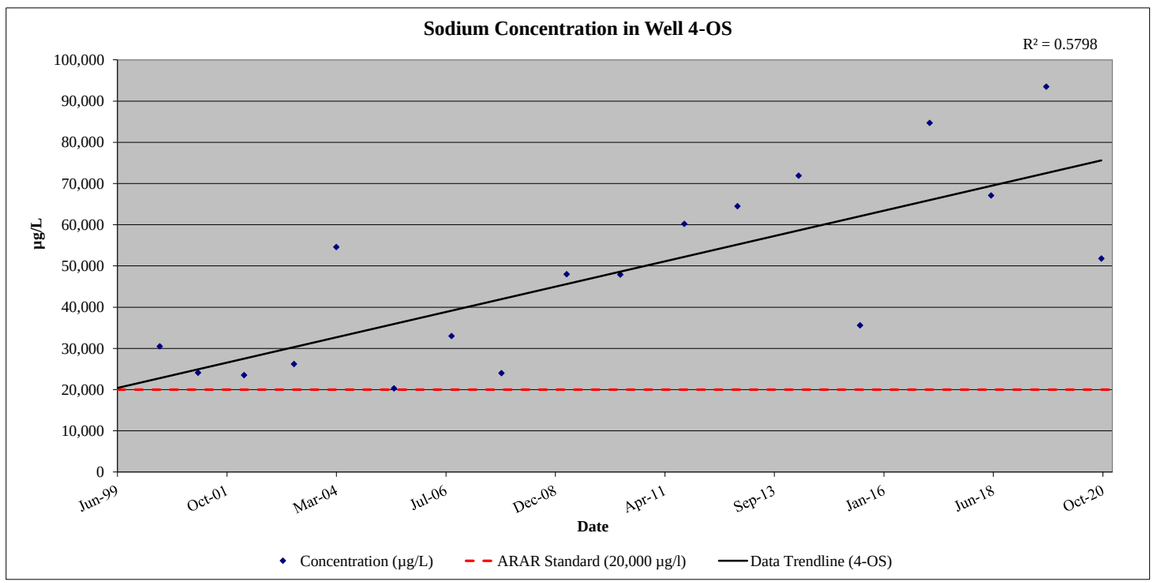
ND or U = Not Detected

Summary of Historical Groundwater Quality Results - Sodium (µg/L)
Town of Ramapo Landfill

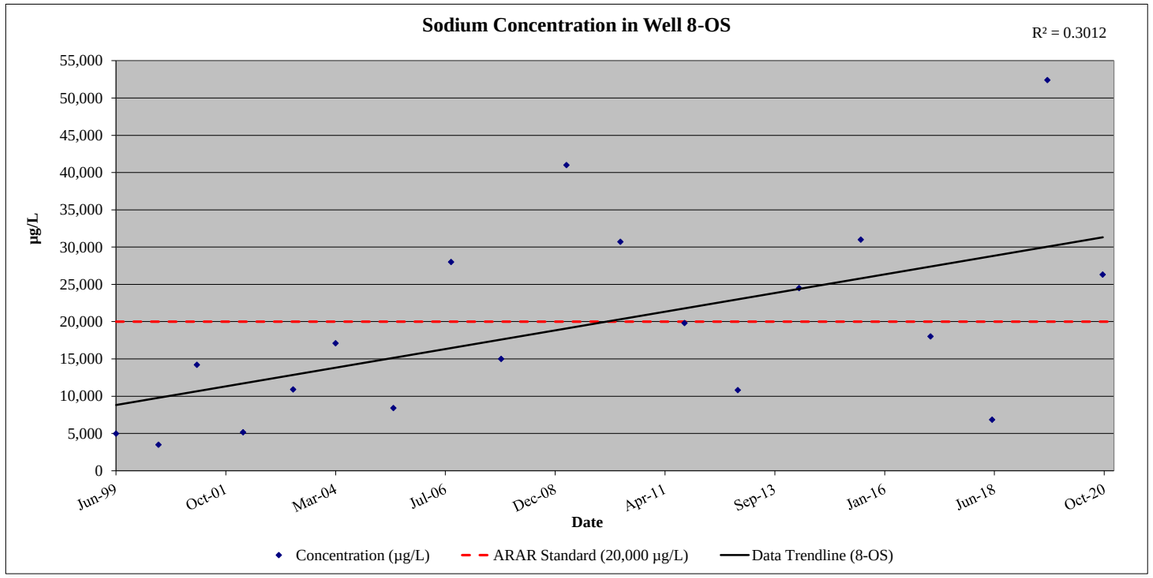


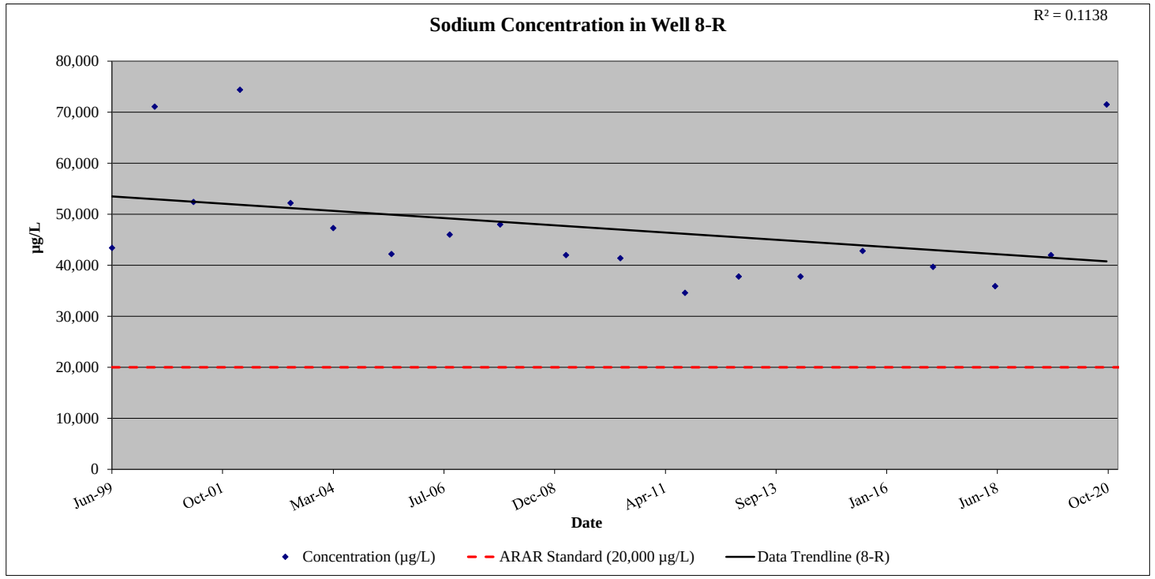


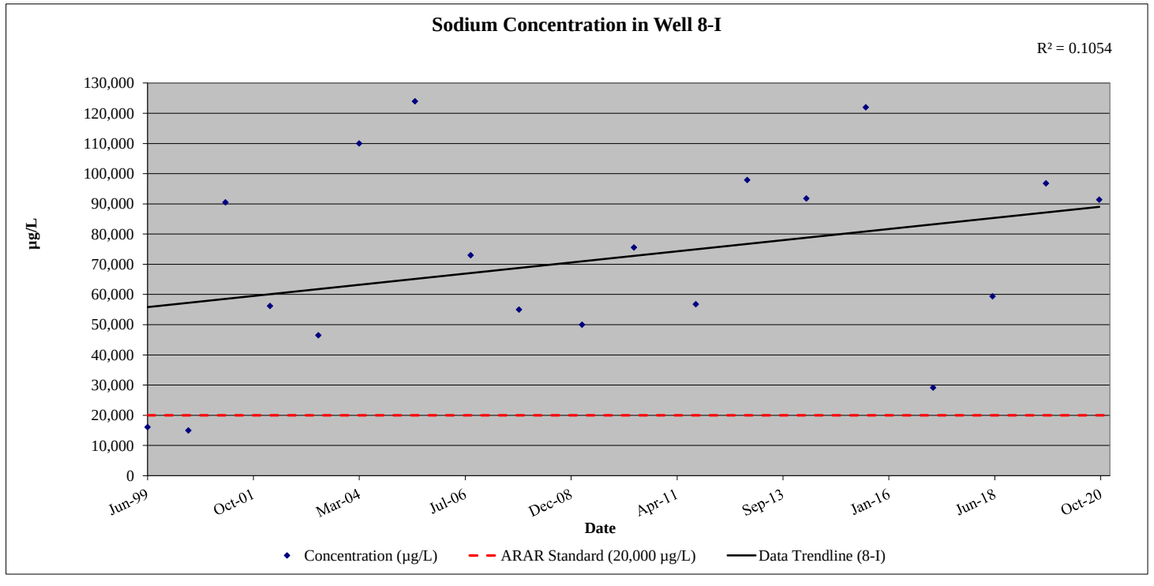


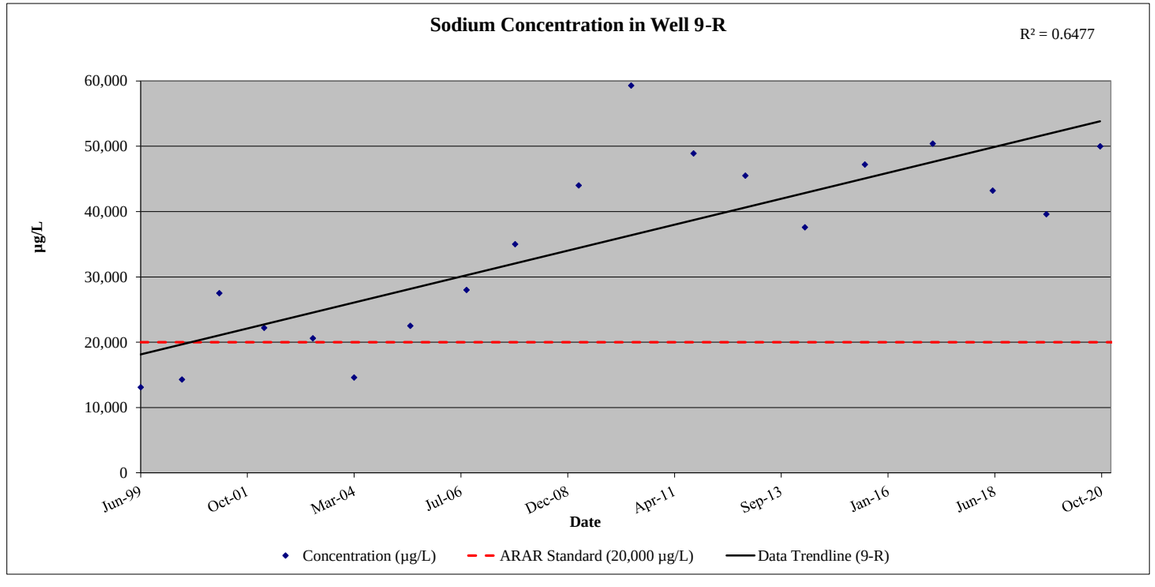


Summary of Historical Groundwater Quality Results - Sodium (µg/L)
Town of Ramapo Landfill

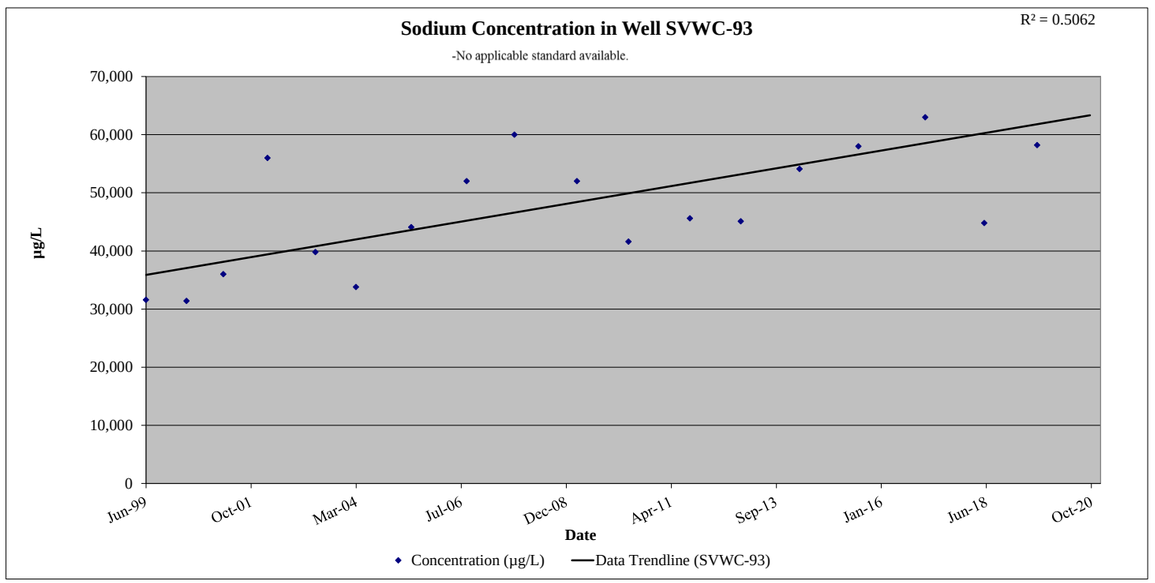


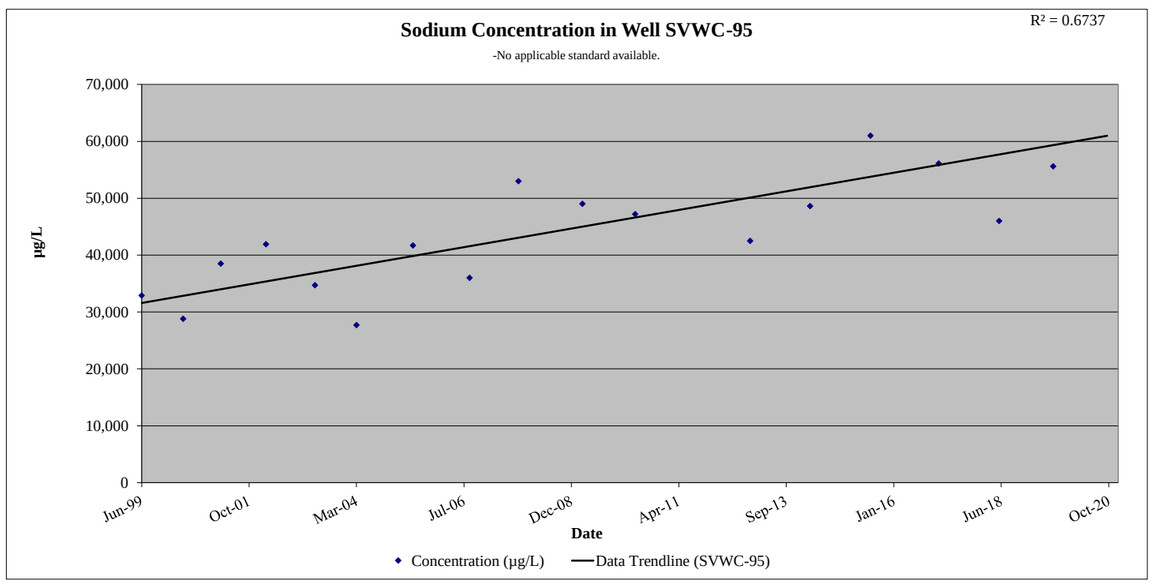


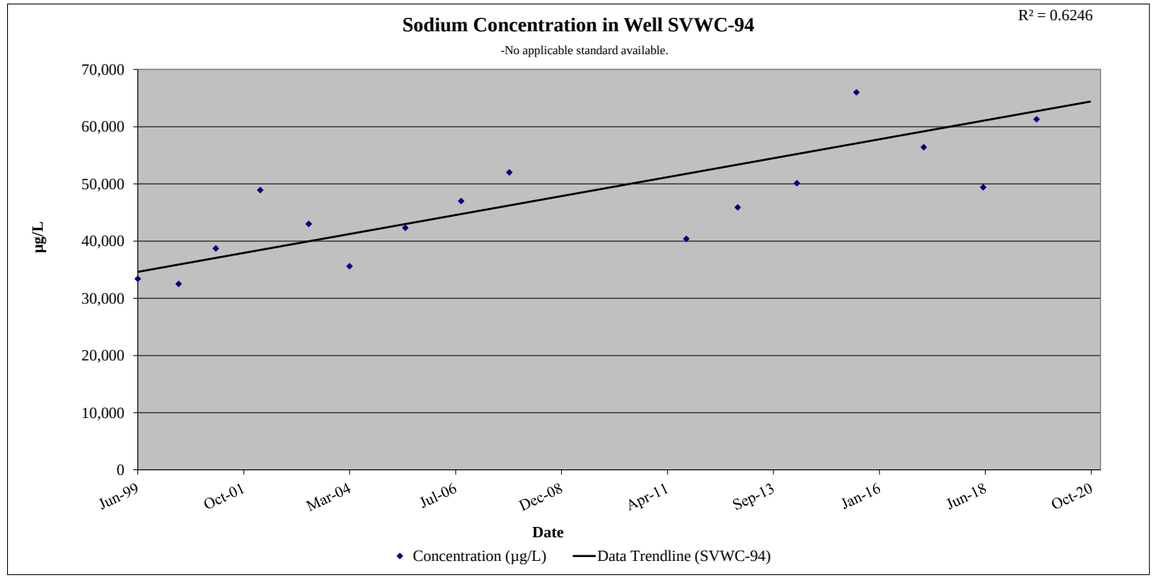




Summary of Historical Groundwater Quality Results - Sodium (µg/L)
Town of Ramapo Landfill







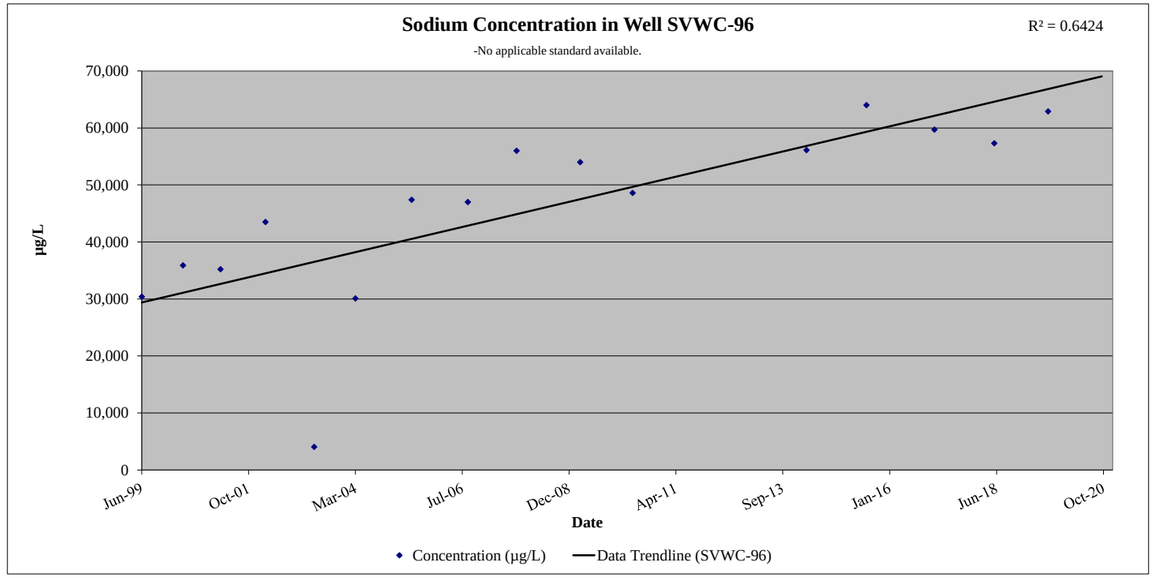


Table 19

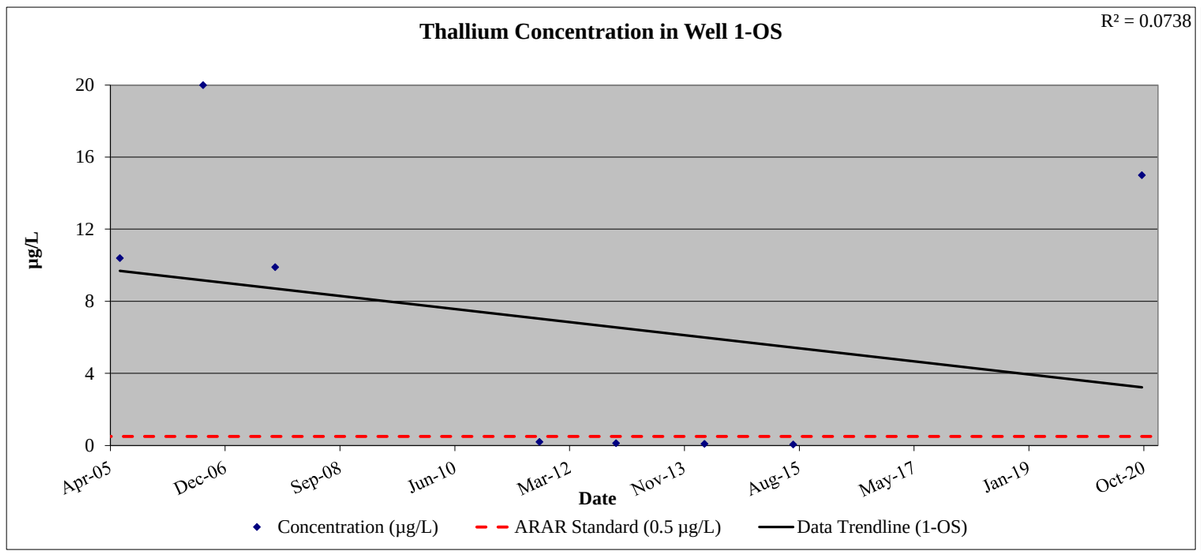
Summary of Historical Groundwater Quality Results - Thallium (µg/L)
Town of Ramapo Landfill

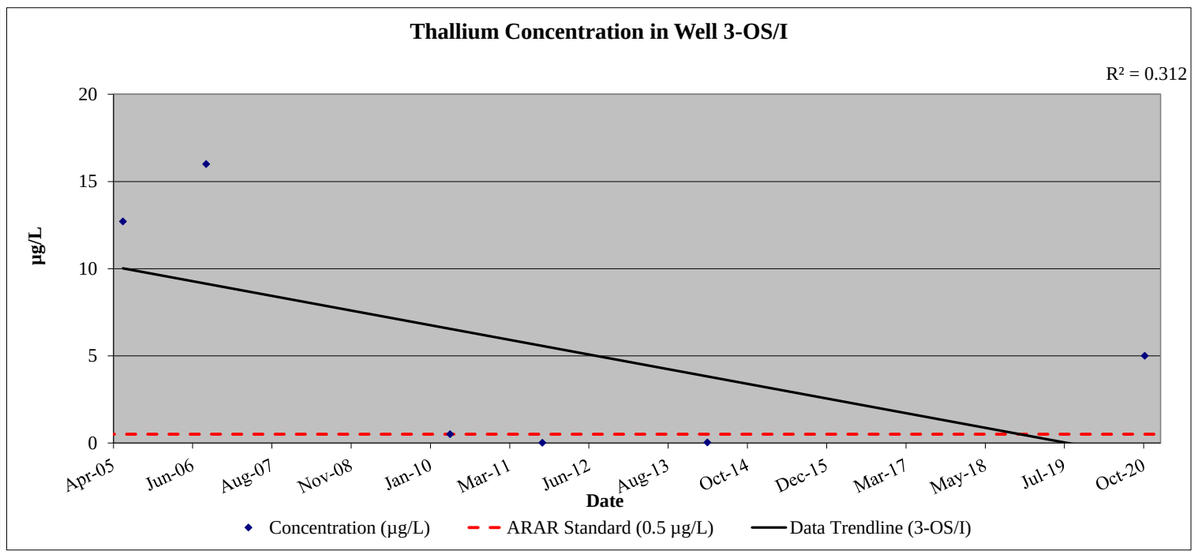
Well ID	Well 1-OS	Well 1-R	Well 2-OS	Well 2-R	Well 3-OS/I	Well 3-R	Well 4-OS	Well 4-R	Well 5-OS	Well 5-I	Well 5-R	Well 7-OS	Well 7-R	Well 8-OS	Well 8-I	Well 8-R	Well 9-OS	Well 9-I	Well 9-R	Well 10-OS	Well 10-I	Well 10-R	UP-OS	UP-I	UP-R	Well PW-1	Well PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96
DATE																														
Jun-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	**7.2**
Sep-99	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
May-00	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	NA	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	NA	NA	NA	NA	NA	NA	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3	< 2.3
Sep-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec-00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-01	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	**4.8** B	NA	**22.8**	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	NA	NA	NA	NA	NA	NA	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7	< 2.7
Jul-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mar-02	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	NA	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	< 3.6	**4.4** B	< 3.6	NA	NA	NA	NA	NA	NA	< 3.6	< 3.6	**4.4** B	< 3.6	< 3.6	< 3.6
Jul-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Apr-03	NA	< 3.5	**4.8** B	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	NA	**4.1** B	< 3.5	< 3.5	NA	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5	NA	NA	NA	NA	NA	NA	**4.1** B	< 3.5	< 3.5	< 3.5	< 3.5	< 3.5
Mar-04	NA	NA	< 2.8	NA	< 3.3	NA	**5.4** B	NA	< 2.8	NA	NA	< 3.3	NA	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	NA	NA	NA	NA	NA	NA	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3	< 3.3
Jun-05	**10.4**	NA	**5.3** B	NA	**12.7**	NA	< 2.9 N	NA	NA	**5.1** B	NA	< 2.9 N	NA	< 2.9 N	**4.6** B,N	**4.6** B,N	< 2.9 N	< 2.9 N	< 2.9 N	NA	NA	NA	NA	NA	NA	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N	< 2.9 N
Sep-06	**20**	NA	**16**	NA	**16**	NA	**24**	NA	**7.8** J	NA	NA	**7.6** J	NA	**9.8** J	**12**	**9.4** J	< 10	< 10	< 10	NA	NA	NA	NA	NA	NA	< 10	**8.8** J	**7.6** J	< 10	< 10	< 10
Oct-07	**9.9** J	NA	< 10	NA	< 10	NA	< 10	NA	< 10	NA	NA	< 10	NA	< 10	< 10	< 10	< 10	< 10	< 10	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10	< 10	< 10
Mar-09	< 20	NA	< 20	NA	< 40	NA	< 20	NA	< 20	NA	NA	< 20	NA	< 20	< 20	< 20	< 20	< 20	< 20	NA	NA	NA	NA	NA	NA	< 20	< 20	< 20	NA	< 10	< 20
May-10	< 0.5	NA	< 0.5	NA	0.5 J	NA	< 0.5 J	NA	< 2.5 D14	NA	NA	< 0.5	NA	< 0.5	< 0.5 J	< 0.5 J	< 0.5	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	< 0.5	< 0.5	< 0.5	NA	< 0.5	< 0.5
Sep-11	0.2 J	0.18 J	0.029 J	0.11 J	0.011 J	0.47 J	0.14 J	NA	0.32 J	0.02 J	0.18 J	0.2 J	NA	< 0.5	0.28 J	0.3 J	0.19 J	**0.6** J	0.28 J	NA	NA	NA	NA	NA	NA	0.31 J	0.22 J	0.29 J	0.26 J	NA	NA
Nov-12	0.13 J	NA	0.035 J	NA	< 0.5	NA	0.051 J	NA	0.44 J	NA	NA	0.21 J	NA	< 0.5	< 0.5	< 0.5	0.014 J	< 0.5	< 0.5	NA	NA	NA	NA	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	NA
Mar-14	0.098 J	NA	0.043 J	NA	0.024 J	NA	0.04	NA	0.39 J	NA		0.25 J	NA	ND	ND	ND	0.022 J	ND	ND	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Nov-14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul-15	0.06 J	NA	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	<0.03	<0.03	<0.03	<0.03	0.06 J	<0.03
Jan-17	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	NA	NA	NA	NA	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
May-18	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	NA	NA	NA	NA	<0.5	NA	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Jul-19	0.14 U	NA	0.14 U	NA	0.14 U	NA	0.14 U	NA	NA	NA	NA	0.14 U	NA	0.14 U	0.14 U	0.14 U	0.14 U	0.37 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
Oct-20	**15 J**	NA	3 U	NA	**5 J**	NA	3 U	NA	NA	NA	NA	**4 J**	NA	0.45 J	0.34 J	0.21 J	0.14 U	0.14 U	0.14 U	0.14 U	0.27 J	0.16 J	0.14 U	0.21 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U

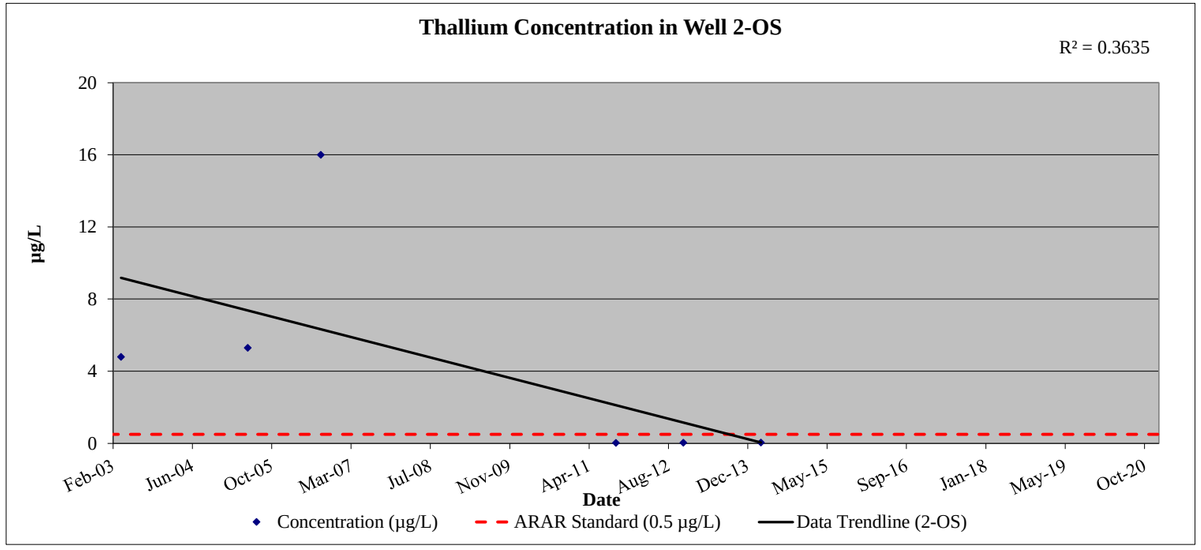
Notes:
ARAR Standard = 0.5 µg/L; USEPA MCL = 2 µg/L; and, Part 5 MCL = 2 µg/L
ARAR = Applicable or Relevant and Appropriate Requirement: NYSDEC T.O.G.S. 1.1.1 Ambient Water-Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 2004).
MCL = Maximum Contaminant Level: USEPA National Primary Drinking Water Regulations.
Values in **BOLD** indicate the reported concentration is greater than the ARAR for the groundwater monitoring wells or MCL for the private and municipal drinking water wells water quality standard.
NA = Not Analyzed
< = The compound was analyzed for but not detected at the laboratory detection limit listed.

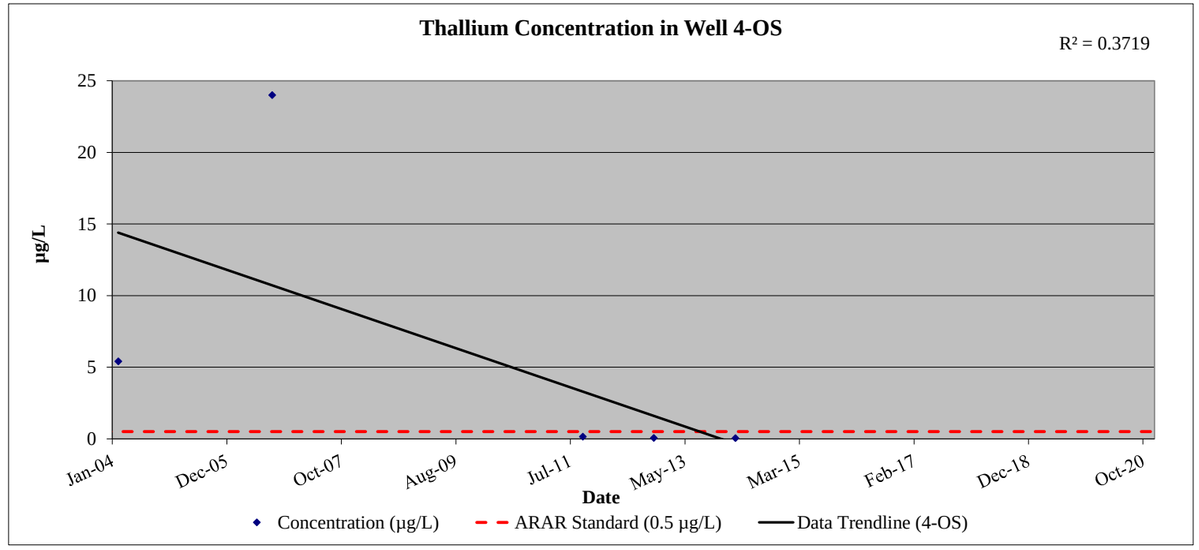
Laboratory Qualifier Definitions
ND or U = Not Detected
B = The analyte was detected above the reporting limit in the associated method blank.
D14 = Dilution required due to high concentration of dissolved solids known to cause failure of routine quality control. Analytical method recommends a five-fold dilution for samples that contain greater than 2,000 mg/L of total solids.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
N = Spiked sample recovery not within control limits.

Summary of Historical Groundwater Quality Results - Thallium (µg/L)
Town of Ramapo Landfill

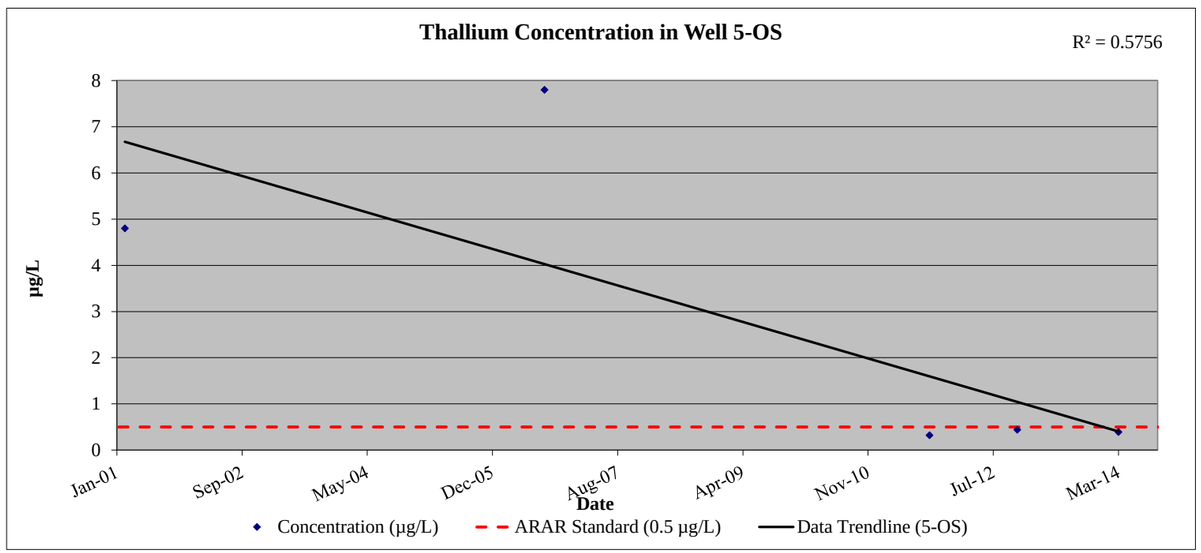


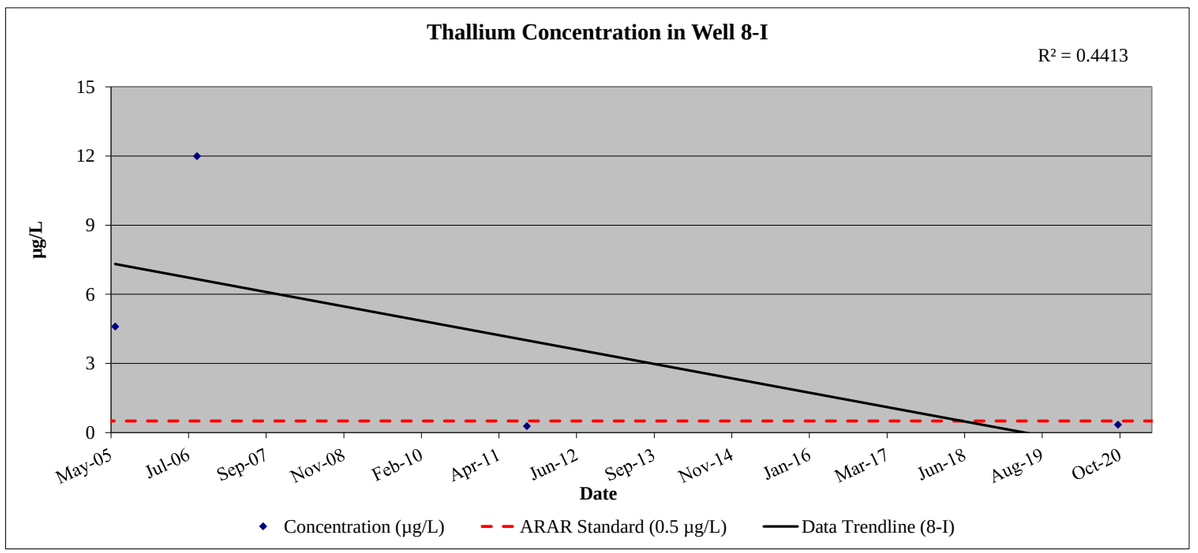


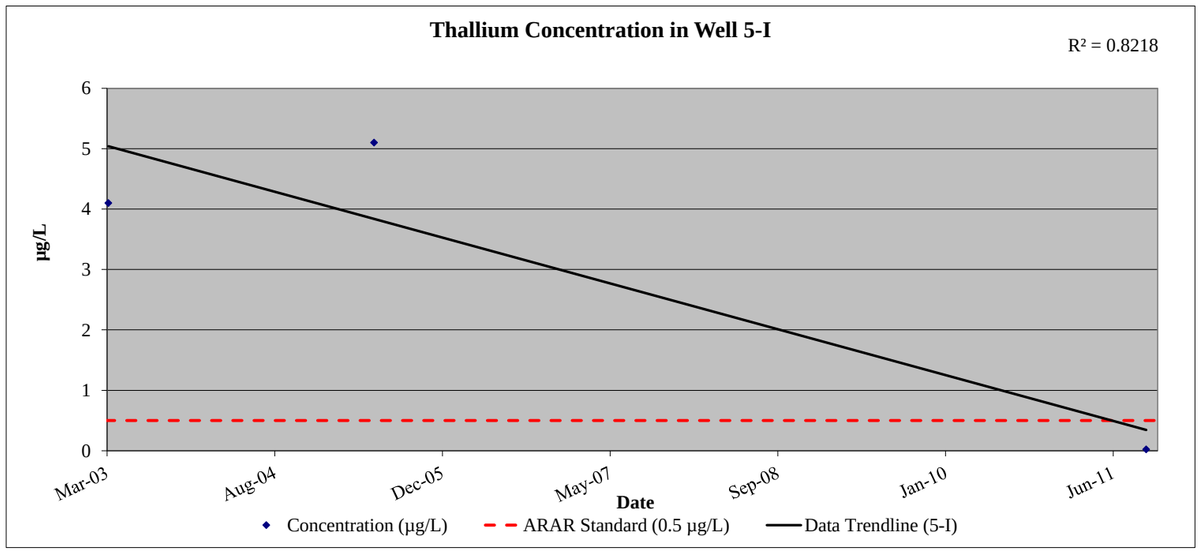


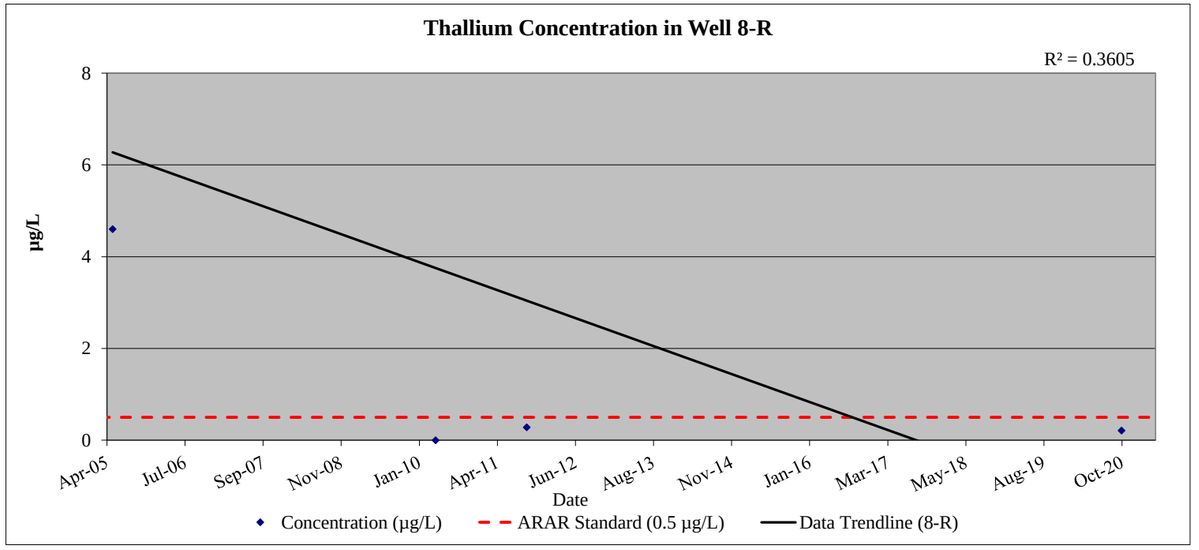


Summary of Historical Groundwater Quality Results - Thallium (µg/L)
Town of Ramapo Landfill

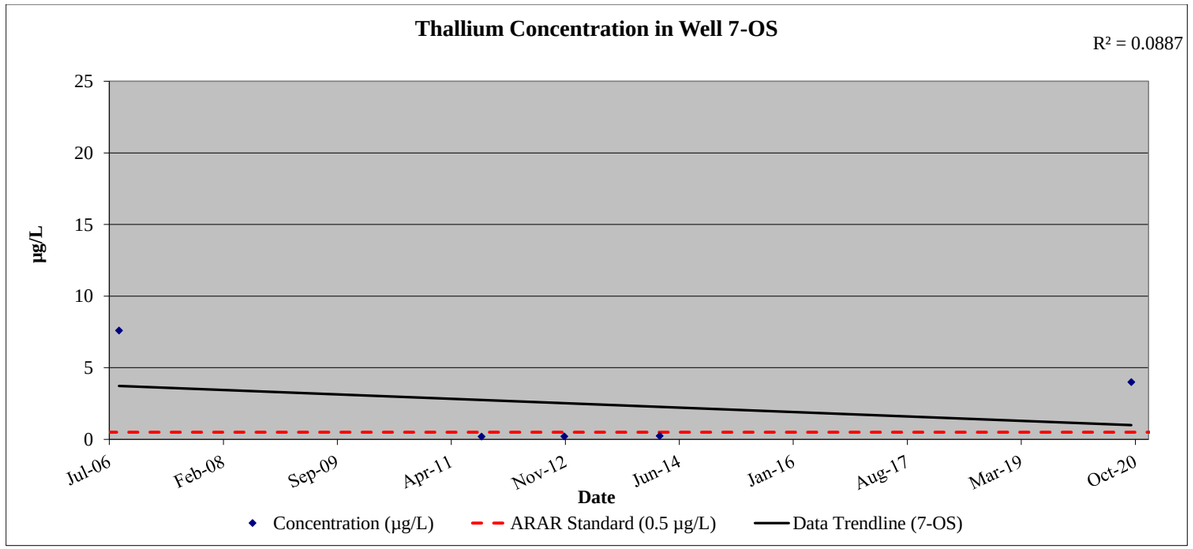








Summary of Historical Groundwater Quality Results - Thallium (µg/L)
Town of Ramapo Landfill



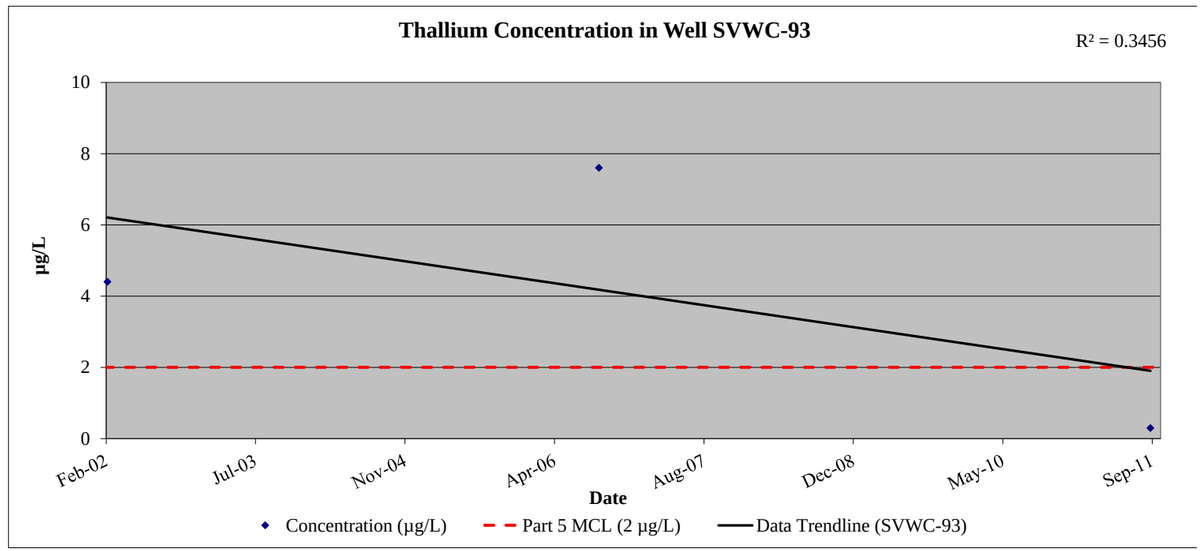


TABLE 20

Volume of Leachate/Groundwater Pumped from Landfill Extraction Wells to RCSD #1 POTW

Town of Ramapo Landfill, Hillburn, New York

Year	Gallons
1995	20,553,200
1996	21,851,062
1997 (1)	22,888,055
1998 (1)	22,888,055
1999	7,280,848
2000	17,234,622
2001	12,328,217
2002	13,576,560
2003	18,415,267
2004	13,827,647
2005	18,285,355
2006	14,391,820
2007	11,671,388
2008	11,929,369
2009	13,692,046
2010	8,955,114
2011	9,763,081
2012	13,345,000
2013	18,202,000
2014	13,254,000
2015	14,591,000
2016	11,314,000
2017	17,811,125
2018	15,001,258
2019	14,079,593
2020	8,342,290*

(1) Flow meter or totalizer did not function - no data available therefore values are based on previous records

Note: The volumes for 1997, 1998, and 2018 are estimated. No data was recorded in 1997 and 1998 due to malfunctioning equipment.
*Readings through September 30, 2020

TABLE 21

Summary of 2019/2020 and Historical Leachate / Groundwater Analytical Results
Rockland County Sewer District #1 - Western Ramapo Treatment Plant
Sample Location : Manhole Immediately Upstream of Wet Well

Parameter	Maximum Concentration	Units	8/20 & 21/09	01/13/10	5/19 & 20/10	1/26/11	7/20/11	3/14/12	5/17/12	8/22/12	7/25/13	1/23/14	05/15/14	07/10/14	01/14/15	04/16/15	07/08/15	02/24/16	06/08/16	09/21/16	05/17/17	09/20/17	11/29/17	04/25/18	07/25/18	10/17/18	05/15/19	09/18/19	02/19/20
pH		S.U.	---	---	---	---	6.8	6.8	6.8	6.5	8.2	7.7	7.1	7.3	7.6	7.5	7.3	7.2	8.2	7.2	7.3	6.8	6.4	6.5	6.8	7.2	6.4	6.9	6.45
Phosphorous (Total)	-	ppm	0.41	1.32	0.02 U	0.13	0.07	0.185	0.105	0.03 U	0.198	3.74	0.264	0.05 U	0.05 U	0.05 U	0.054	0.05 U	0.601	0.238	0.894	1.73	0.862	0.106	1.05	0.546	3.92	0.351	0.85
Chloride	-	ppm	160	180	130	200	257	123	92.6	90.8	148	4010	136	218	97.4	263	201	267	165	294	194	177	201	180	70.1	163	123	311	161
Ammonia	-	ppm	520	340	1.8	1 U	2.3	0.645	0.821	2.03	0.1 U	1260	0.1 U	0.1 U	0.7	0.1 U	0.128	0.422	0.1 U	1.72	0.1 U	5.24	2.07	0.21	0.22	2.27	0.28	0.06	0.17
BOD	-(1)	ppm	30	100	2	4	6	4	2	2	1	39	2	9	12	3	4	3	2	12	13	3	3	7	24	15	2	1	1.5
COD	-	ppm	161	576	35	43	55	52	20	9	---	2600	30	56	47	27	110	62	30	42	76	41	88	86	300	39	35	41	32
Suspended Solids	-(2)	ppm	24	74	5	2	20	7	3	6	6	72	6	6	4	5	7	16	4	4	18	12	4	13	14	19	2	1.0 U	1.0 U
TKN	-	ppm	530	380	2.2	1 U	3.4	1.47	1.59	4.06	1.02	1500	0.64	1.03	2.25	0.35	0.35	1.61	0.41	3.23	2.82	79.5	2.49	0.61	1.02	2.84	0.48	0.21	0.37
Total Dissolved Solids	-	ppm	2,300	950	480	720	1,500	504	312	366	504	958	511	628	322	694	740	756	624	976	594	567	660	631	360	590	470	890	540
O&G Non-Polar	25	ppm	1.4 U	1.4 U	1.4 U	5 U	0.6 U	6.30	---	---	---	---	---	---	---	---	---	---	5 U	5 U	5 U	5 U	1.7 U	5 U	1.5 U	1.7 U	1.9 U	4.0 U	4.0 U
Antimony	-	ppm	0.1	0.11	0.09	0.098	0.111	0.0792 B	0.0966 B	0.0725 B	0.106	0.1	0.068	0.096	0.05 U	0.08	0.08	0.05	0.08	0.11	0.001 U	0.001 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.02 U
Arsenic	0.25	ppm	0.727	0.783	0.744	0.87	0.428	1.35	0.823	1,160	0.508	0.025 U	0.703	0.64	0.572	0.261	0.575	4.73	0.395	0.211	0.002 U	0.003	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.01 U
Beryllium	-	ppm	0.005 U	0.005 U	0.005 U	0.015 U	0.0036 J	0.002 U	0.002 U	0.002 U	0.001	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U
Boron	1.0	ppm	0.004 U	0.007	0.004 U	0.01 U	0.0035 U	0.002	0.002	0.002	0.001 U	0.002	0.001	0.004	0.001 U	0.001 U	0.003	0.009	0.001 U	0.001 U	0.10	0.11	0.11	0.09	0.1	0.03 U	0.09	0.12	0.22
Cadmimm	0.07	ppm	0.001 U	0.001 U	0.001 U	0.005 U	0.0008 U	0.001 U	0.000116 B	0.000106 B	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.003	0.01	0.005	0.003 B	0.001 U	0.001 U	0.001 U	0.009	0.001 U	0.002 U
Chromium	0.6	ppm	0.001 U	0.001 U	0.001 U	0.002 U	0.0005 J	0.004 U	0.004 U	0.008	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.009	0.003 B	0.009	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.005 U
Copper	1.0	ppm	0.001 U	0.004	0.001 U	0.005 U	0.0039 J	0.011 U	0.016 B	0.011 U	0.025 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.023	0.019	0.01 U	0.01 U	0.013	0.032	0.01 U	0.01 U	0.01 U
Lead	1.0	ppm	0.018	0.085	0.002 U	0.025 U	0.158	0.015	0.024	0.01 U	0.010 U	0.067	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.023	0.01 U	0.01 U	0.074	0.067	0.068	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.0082
Manganese	-	ppm	0.002 U	0.002 U	0.002 U	0.01 U	0.0028 U	0.044	0.015 U	0.032 B	0.016 U	0.016 U	0.038 B	0.027 B	0.058	0.059	0.028 B	0.063	0.03 B	0.094	0.542	0.943	0.656	0.411	0.226	1.31	0.383	0.08	0.27
Mercury	0.05	ppm	0.0002 U	0.008 U	0.0002 U	0.0002 U	0.00007 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 U
Molybdenum	0.14	ppm	0.003	0.01	0.002	0.005 U	0.0082	0.016 B	0.038	0.01 U	0.025 U	0.025 U	0.074	0.025 U	0.031	0.047	0.025 U	0.059	0.061	0.07	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.02 U
Nickel	1.0	ppm	0.001 U	0.001	0.001 U	0.01 U	0.0012 U	0.01 U	0.01 U	0.01 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.055	0.051	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.087	0.02 U
Selenium	0.1	ppm	0.005 U	0.025 U	0.005 U	0.005 U	0.0038	0.05 U	0.033 U	0.033 U	0.033 U	0.039 B	0.075	0.05 U	0.05 U	0.053	0.061	0.042 B	0.05 U	0.05 U	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.02 U
Silver	2.3	ppm	0.027	0.117	0.003	0.025 U	0.471	0.044	0.109	0.023	0.015	0.093	0.01 U	0.043	0.044	0.011	0.01 U	0.051	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.004 U
Thallium	-	ppm	0.01 U	0.01 U	0.01 U	0.01 U	0.0037 U	0.004	0.004	0.001 U	0.002	0.001	0.002	0.003	0.001 U	0.004	0.001	0.002	0.001 U	0.001 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.02 U
Zinc	3.0	ppm	0.01 U	0.01 U	0.01 U	0.01 U	0.0047 U	0.0024 B	0.0019 B	0.0027 B	0.00240 B	0.05 U	0.05	0.05 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.059	0.052	0.036 U	0.01 U	0.16	0.04	0.019	0.01 U	0.02 U
Cyanide Total	1.0	ppm	0.02	0.05 U	0.01 U	0.01 U	0.00498 U	0.01 U	0.01 U	0.01 U	0.01 U	0.057	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.01 U	0.002 U	0.013	0.01 U
Cyanide, Free	0.1	ppm	0.01	(3)	0.01 U	0.005	0.00468 U	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01 U	0.01 U	0.05 U	---	---	---	---	---	---
Cyanide, Amenable	-	ppm	---	---	---	---	---	0.01 U	0.01 U	0.010 U	0.01 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	---	0.01 U	0.010 U	0.010 U	0.005 U	0.012	0.01 U
Phenol	2.25	ppm	0.03 U	0.015 U	0.015 U	0.015 U	0.015 U	0.05 U	0.05 U	0.05 U	0.01 U	0.067	0.05 U	0.01 U	0.01 U	0.016 B	0.016 B	0.019 B	0.01 U	0.029 B	0.01 U	0.01 U	0.015 U	0.015 U	0.063	0.015 U	0.015 U	0.015 U	0.015 U
USEPA Priority Pollutants (4)		ppm	0.06 U	0.06 U	0.06 U	0.0206 U	0.028 U	0.085 (5)	0.087 (5)	0.089 (5)	0.57 J	0.0197 J	0.00948 J	0.03611 J	0.00701 J	0.00887 J	0.01294 J	0.00835 J	0.01653 J	0.00781	1.76 J	19.02 J	7.39 J	2.66 J	ND	ND	3.57 J	8.58 J	ND

Notes:
B = The analyte was detected above the reporting limit in the associated method blank.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
U = Reported at concentration less than indicated reporting limit.
(1) A surcharge will apply if BOD is > 250 ppm
(2) A surcharge will apply if Suspended Solids is > 300 ppm
(3) Could not report free Cyanide due to matrix interference
(4) Excluding metals, Phenol and Cyanides
(5) Does not include : Acrolein, Acrylonitrile, Benzidine, Parachlorometa cresol, 1, 2-diphenylhydrazine, 4-chlorophenyl phenyl ether, 4-bromophenyl phenyl ether, Methyl chloride, Methyl bromide, 4, 6 -dinitro-o-cresol
ND = Not Detected.

APPENDIX A

INSPECTION CHECKLIST AND INSTITUTIONAL AND ENGINEERING CONTROLS EVALUATION FORM

Inspection Checklist and Institutional and Engineering Controls Evaluation Form
Town of Ramapo Landfill
250 Torne Valley Road, Hillburn, New York

Date: 10/7/2020
Inspected By: Paul Scholar and Christopher Ogden – Sterling Environmental Engineering, P.C.

Landfill Property Item	Condition: (Check applicable items)			Remarks
	Acceptable	Not Acceptable	Not Present	
1. Vegetative Cover	X			Good condition – No problems noted.
2. Surface Water Drainage Structures (Swales, Downchutes, Channels, Plunge Pools, Outfalls to Torne Brook).		X		Overgrown vegetation is present in many of the drainage channels along the perimeter of the Landfill (see Photographs 1, 3, 7, 11, 13, 15, 21, and 23). Landfill downchutes are in acceptable condition.
a. Sediment Build-Up in Drainage Structures	X			Good condition – No problems noted.
b. Pooling or Ponding	X			Three (3) plunge pools (Plunge Pool No.'s 1, 2 and 3) are part of the drainage system but are not on the Landfill cover (see Figure 4).
c. Slope Integrity	X			Good condition – No problems noted.
d. Overall Adequacy	X			
e. Concrete Lining	X			
f. Gabion Lining	X			
g. Corrugated Metal Pipe (CMP) Lining		X		
3. Access Road	X			Good condition – No problems noted.
4. Landfill Cover System	X			
a. Erosion Damage	X			
b. Leachate Seeps			X	
c. Settlement			X	
d. Stone Aprons	X			

Landfill Property Item	Condition: (Check applicable items)			Remarks
	Acceptable	Not Acceptable	Not Present	
5. Gabion Retaining Walls	X			Good condition - No problems noted.
a. Structural	X			
b. Drainage Media Behind Wall	X			
6. Fence and Gates	X			Good condition - No problems noted.
7. Slope Stability	X			Good condition - No problems noted.
a. Landfill	X			
b. Mountain Side	X			
8. Gas Vents		X		Two (2) damaged gas vents and two (2) angled gas vents (see Photographs 4, 5, 6, and 8) were observed across the Landfill. Overgrown vegetation was observed surrounding several gas vents.
a. Are Openings Unobstructed?	X			
b. Pipe Condition	X			
9. Burrow Holes			X	No active burrow holes were observed.

Other	Yes	No
Obtain Groundwater Extraction Well Operation Period Records and Maintenance Records for Current Year	X	

Comments:

Damaged concrete collar for manhole cover for leachate collection system observed at MH E-6 (see Photograph 2).

APPENDIX B

NYSDEC INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

Enclosure 2

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

Site Details **Box 1**

Site No. 344004

Site Name Ramapo Town Landfill

Site Address: Torne Valley Road Zip Code: 10901
City/Town: Ramapo
County: Rockland
Site Acreage: 80.000

Reporting Period: August 1, 2019 to October 31, 2020

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

Box 2

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

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

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

Signature of Owner, Remedial Party or Designated Representative Date

SITE NO. 344004 **Box 3**

Description of Institutional Controls

Parcel	Owner	Institutional Control
39.19-1-3	Town of Ramapo	
		Monitoring Plan
		O&M Plan
		Ground Water Use Restriction
		Landuse Restriction
		Soil Management Plan
		Site Management Plan
		IC/EC Plan

Land use is restricted to commercial/industrial.
Groundwater use is restricted.

39.19-1-3.1	Rockland County Sewer District No. 1	
		Ground Water Use Restriction
		Site Management Plan

Groundwater Wells for drinking water shall not be used or installed on any portion of the Ramapo Landfill Site

39.19-1-4	Rockland County Solid Waste Mgmt Auth.	
		Ground Water Use Restriction
		Site Management Plan

Groiundwater wells for drinking water shall not be installed or used on any portion of the Ramapo Landfill Site

39.19-1-5	Rockland County Solid waste Mgmt Auth	
		Ground Water Use Restriction
		Site Management Plan

Groundwater wells for drinking water shall not be installed or used on any portion of the Ramapo Landfill Site.

Box 4

Description of Engineering Controls

Parcel	Engineering Control
39.19-1-3	
	Cover System
	Leachate Collection
	Fencing/Access Control
	Groundwater Containment

Leachate Collection System
Landfill Cover and Gas Venting
Groundwater Containment System (including extraction wells)
Fencing around the capped area
Monitoring Well Network

Box 5

Periodic Review Report (PRR) Certification Statements

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

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

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

YES	NO
X	

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

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

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

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

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

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

YES
X

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

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

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 344004

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Edward P. Dzurinko (Town of Ramapo, Director of Public Works) at 16 Pioneer Avenue, Tallman, NY 10982,

am certifying as Designated Representative (Owner) for the Site named in the Site Details Section of this form.

Edward P. Dzurinko

Signature of Owner, Remedial Party or Designated Representative Rendering Certification

11/02/2020

Date

IC/EC CERTIFICATIONS

Box 7

Professional Engineer Signature

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

I, Andrew M. Millspaugh, P.E., at 24 Wade Road, Latham, NY 12205, am certifying as a Professional Engineer for the Town of Ramapo (Owner).

Signature of Professional Engineer, for the Owner Remedial Party, Rendering Certification

11/19/2020

Date

APPENDIX C

PHOTOGRAPH LOG

Photograph 1: View of slightly overgrown vegetation in the drainage channel along the northern perimeter of the Landfill, looking east-southeast.

Photograph 1: View of damaged upper portion of the concrete drainage vault (MH E-6) near the northern perimeter of the Landfill, looking southeast.

Photograph 2: View of well-established cover system and minor overgrown vegetation in drainage feature in the northern portion of the Landfill, looking southwest.

Photograph 3: View of leaning gas vent in the north central portion of the Landfill, looking southeast.

Photograph 4: View of leaning gas vent to the north of the firearms training building, looking south.

Photograph 5: View of damaged gas vent near the midwestern perimeter of the Landfill, looking south.

Photograph 7: View of slightly overgrown vegetation in drainage feature in east-central portion of the Landfill, looking northwest.

Photograph 8: View of damaged gas vent near the mideastern perimeter of the Landfill, looking southwest.

Photograph 6: View of shooting range along the mideastern perimeter of the Landfill, looking southeast.

Photograph 7: View of well-maintained cover system along the southeastern perimeter of the Landfill, looking southwest.

Photograph 8: View slightly overgrown vegetation in the drainage ditch along the southwestern perimeter of the Landfill, looking north-northeast.

Photograph 9: View of well-maintained cover system in the central portion of the Landfill, looking northeast.

Photograph 10: View of overgrown vegetation in drainage feature along mideastern perimeter of the Landfill, looking east-northeast.

Photograph 14: View of well-maintained drainage chute along the mideastern perimeter of the Landfill, looking west-southwest.

Photograph 1511: View of overgrown vegetation in drainage swale along the mideastern perimeter of the Landfill, looking east.

Photograph 1612: View of debris build-up in drainage swale along the mideastern perimeter of the Landfill, looking southeast.

Photograph 1713: View of well-maintained cover system along the mideastern perimeter of the Landfill, looking west-southwest.

Photograph 1814: View of debris build-up in drainage swale along the northeastern perimeter of the Landfill, looking southwest.

Photograph 1915: View of well-maintained gabion retaining walls along the southwestern perimeter of the Landfill, looking north.

Photograph 2016: View of recently mowed cover system along the southwestern perimeter of the Landfill, looking north.

Photograph 2117: View of overgrown vegetation in drainage swale along the southeastern perimeter of the Landfill, looking north-northeast.

Photograph 2218: View of Lift Station W-20 in the southwestern portion of the Landfill, looking east.

Photograph 2319: View of overgrown vegetation in drainage feature along the southern perimeter of the Landfill, looking south.

Photograph 2420: View of well-maintained cover system along the southern perimeter of the Landfill, looking west-northwest.

APPENDIX D

LABORATORY ANALYTICAL RESULTS - GROUNDWATER

www.alphalab.com

Alpha Analytical

Laboratory Code: 11148

SDG Number: L2042334

Table of Contents

Project Name: TOWN OF RAMAPO LF
Project Number: 20010, TASK 200

Lab Number: L2042334
Report Date: 10/12/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2042334-01	9-R	WATER	HILLBURN, NY	10/05/20 17:00	10/05/20
L2042334-02	TB10052020	TRIP BLANK (AQUEOUS)	HILLBURN, NY	10/05/20 00:00	10/05/20
L2042334-03	UP-OS	WATER	HILLBURN, NY	10/05/20 15:35	10/05/20
L2042334-04	UP-I	WATER	HILLBURN, NY	10/05/20 14:00	10/05/20
L2042334-05	UP-R	WATER	HILLBURN, NY	10/05/20 14:50	10/05/20
L2042334-08	DUP10052020	WATER	HILLBURN, NY	10/05/20 00:00	10/05/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

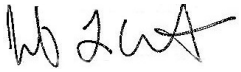
Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The analysis of 1,4-Dioxane and PFAS will be issued under separate cover.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Report Date: 10/12/20

Title: Technical Director/Representative

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries

Report Format: DU Report with 'J' Qualifiers

Data Qualifiers

when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 7890 GC/5975C MSD	Columns (length x ID x df):
Trap: Supelco K Trap (VOACARB 3000)	RTX-VMS 20m x 0.18mm x 1um
Concentrator: EST Encon (or equivalent)	RTX-VMS 30m x 0.25mm x 1.4um
Autosampler: EST Centurion (or equivalent)	RTX-502.2 40m x 0.18mm x 1um
Purge time: 11 min	

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)	Column Type: Restek RTX 502.2
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 105 Meters
Concentrator: EST Encon (or equivalent)	df: 3.00 um
Autosampler: EST Centurion (or equivalent)	ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD	Column Type: DB-VRX
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 60 Meters
Concentrator: Tekmar Velocity / EST Encon	df: 1.40 um
Autosampler: Varian Archon / EST Centurion	ID: 0.25 mm
Purge time: 11 min	Desorb: 1 min

Volatile Organics: Dissolved Gas

Instrument: Agilent 7890 (or equivalent) with FID/TCD

	Column Type: Haysep S Column
	Column Length: 2 Meters packed (100/200 mesh)
Autosampler: LEAP Headspace	Purge time: 0.6 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE / QP2020

Concentrator: Entech 7100A or 7200	Column Type: Restek RTX-1
Autosampler: Entech 7016CA or 7016D	Column Length: 60 Meters
	df: 1.00 um
	ID: 0.25 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.32 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum/EPH:

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5	df: 0.25um, 0.18 um
Column Length: 30 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (8081):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8082):

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary

Alpha Job Number : L2042334

Account Name : Sterling Environmental Engineering
Project Number : 20010, TASK 200
Project Name : TOWN OF RAMAPO LF

Received : 05-OCT-2020
Reviewer : Kim L. Bailey

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	2.7	
B	Absent/	Ice	6.0	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between sample labels & COC?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NO**

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 12 2020, 04:25 pm

Login Number: L2042334
Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200
Received: 05OCT20 Due Date: 12OCT20

Sample #	Client ID	Mat	PR	Collected
L2042334-01	9-R	S0	1	05OCT20 17:00

8260 report lsit built ASP-A Package Due Date: 10/12/20

ALK-T-2320,ASP-A,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042334-02	TB10052020	S0	1	05OCT20 00:00

8260 report lsit built Package Due Date: 10/12/20

NYTCL-8260

L2042334-03	UP-OS	S0	1	05OCT20 15:35

8260 report lsit built Package Due Date: 10/12/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042334-04	UP-I	S0	1	05OCT20 14:00

L2042334-04 MS L2042334-04 MSD 8260 report lsit built Package Due Date: 10/12/20

ALK-T-2320,COD-410-LOW,HARDT,MS/MSD,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042334-05	UP-R	S0	1	05OCT20 14:50

8260 report lsit built Package Due Date: 10/12/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 12 2020, 04:25 pm

Login Number: L2042334

Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200

Received: 05OCT20 Due Date: 12OCT20

Sample #	Client ID	Mat	PR	Collected
L2042334-08	DUP10052020	1 S0	05OCT20	00:00

8260 report lsit built Package Due Date: 10/12/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

Logged By: Melissa Deyo

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/5/20

ALPHA Job #: L2042334

Client Information

Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information

Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #)
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time

Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

Deliverables

[X] ASP-A [ ] ASP-B
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[X] Other ASP-B for PFAS + 1,4 Dioxane Only

Regulatory Requirement

[X] NY TOGS [ ] NY Part 375
[ ] AWQ Standards [ ] NY CP-51
[ ] NY Restricted Use [ ] Other
[ ] NY Unrestricted Use
[ ] NYC Sewer Discharge

Billing Information

[X] Same as Client Info
PO # Dioxane Only

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
[ ] NJ [ ] NY
[ ] Other: NA

These samples have been previously analyzed by Alpha [ ]

Other project specific requirements/comments:

mark.williams@sterlingenvironmental.com

Please specify Metals or TAL. * Part 360 Baseline Metals List

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCs 8260	TKN-4500	A2-1,4-DIOXANE-SIM	A2-NY-527-ISOTOPE	T-Alkalinity-SM 2320	COD-410.4	TAL Metals * Hardness	Total Bottles
42534-01	9-R	10-5-2020	1700	GW	PWS	X	X	X	X	X	X	X	10
-02	~~TRIP~~ TB10052020		-	LW		X							2
-04	~~DUP~~ UP-IMS		1405	GW		X	X	X	X	X	X	X	10
-04	~~DUP~~ UP-IMSD		1410	GW		X	X	X	X	X	X	X	10
-03	UP-OS		1535	GW		X	X	X	X	X	X	X	10
-04	UP-I		1400	GW		X	X	X	X	X	X	X	10
-05	UP-R		1450	GW		X	X	X	X	X	X	X	10
-06	~~SVOC-03~~ EB10052020		1245	LW			~~X~~	~~X~~	X	~~X~~	~~X~~	~~X~~	2
-07	~~SVOC-04~~ FB10052020		1240	LW					X				1
-08	~~SVOC-05~~ DUP10052020	↓	-	GW	↓	X	X	X	X	X	X	X	10

Container Type: V P A P P P P
Preservative: B D A A A D C

Sample Filtration: [ ] Done [ ] Lab to do
Preservation: [ ] Lab to do
(Please Specify below)

Sample Specific Comments

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code:
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10-5-2020 1700		
	10/5/20 1930	AAL	10/5/20 20:30
AAL	10/5/20 23:55		10/5/20 23:55

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

Organics

Volatiles Data

Volatiles Sample Data

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 10:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: JMT
Lab File ID	: VE201007A10	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-02	**Date Collected**	: 10/05/20 00:00
Client ID	: TB10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 10:18
Sample Matrix	: Trip Blank (aqueous)	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: JMT
Lab File ID	: VE201007A09	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 11:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: JMT
Lab File ID	: VE201007A11	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-04	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-I	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 16:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: V05201009A22	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 15:22
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201007A15	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 15:48
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201007A16	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419489-5	**Date Collected**	: NA
Client ID	: WG1419489-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/07/20 08:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: VE201007A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419528-5	**Date Collected**	: NA
Client ID	: WG1419528-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/07/20 11:08
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: VG201007A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420463-5	**Date Collected**	: NA
Client ID	: WG1420463-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/09/20 09:34
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201009A05	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 13:30
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: PS
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE5
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	137	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 13:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: PS
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE5
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	95.6	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-04	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-I	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 13:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: PS
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE5
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	74.2	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 13:39
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: PS
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE5
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	45.2	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 13:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: PS
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE5
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	139	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419331-1	**Date Collected**	: NA
Client ID	: WG1419331-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/12/20 13:03
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: PS
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE5
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	ND	0.660	NA	U

Inorganic Data
(ICPMS Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 08:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420097.pdf	**Instrument ID**	: ICPMSQ2
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.00918	0.0100	0.00327	J
7440-36-0	Antimony, Total	0.00074	0.00400	0.00042	J
7440-38-2	Arsenic, Total	0.00046	0.00050	0.00016	J
7440-39-3	Barium, Total	0.01580	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	0.00045	0.00020	0.00005	
7440-70-2	Calcium, Total	41.1	0.100	0.0394	
7440-47-3	Chromium, Total	0.00355	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00112	0.00050	0.00016	
7440-50-8	Copper, Total	0.00191	0.00100	0.00038	
7439-89-6	Iron, Total	0.533	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	10.1	0.0700	0.0242	
7439-96-5	Manganese, Total	1.137	0.00100	0.00044	
7440-02-0	Nickel, Total	0.08511	0.00200	0.00055	
7440-09-7	Potassium, Total	10.2	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	50.0	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00050	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 08:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420097.pdf	**Instrument ID**	: ICPMSQ2
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0454	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	0.00035	0.00050	0.00016	J
7440-39-3	Barium, Total	0.00286	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	28.8	0.100	0.0394	
7440-47-3	Chromium, Total	0.00132	0.00100	0.00017	
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00057	0.00100	0.00038	J
7439-89-6	Iron, Total	0.0620	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	7.20	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00157	0.00100	0.00044	
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	0.758	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	4.06	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00050	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	Lab Number	: L2042334
Project Name	: TOWN OF RAMAPO LF	Project Number	: 20010, TASK 200
Lab ID	: L2042334-04	Date Collected	: 10/05/20 14:00
Client ID	: UP-I	Date Received	: 10/05/20
Sample Location	: HILLBURN, NY	Date Analyzed	: 10/09/20 08:37
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: AM
Lab File ID	: WG1420097.pdf	Instrument ID	: ICPMSQ2
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/08/20

		mg/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	0.0955	0.0100	0.00327	
7440-36-0	Antimony, Total	0.00194	0.00400	0.00042	J
7440-38-2	Arsenic, Total	0.00041	0.00050	0.00016	J
7440-39-3	Barium, Total	0.00608	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	22.5	0.100	0.0394	
7440-47-3	Chromium, Total	0.02597	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00048	0.00050	0.00016	J
7440-50-8	Copper, Total	0.00146	0.00100	0.00038	
7439-89-6	Iron, Total	0.266	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	4.84	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00561	0.00100	0.00044	
7440-02-0	Nickel, Total	0.01049	0.00200	0.00055	
7440-09-7	Potassium, Total	0.530	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	3.68	0.100	0.0293	
7440-28-0	Thallium, Total	0.00021	0.00050	0.00014	J
7440-62-2	Vanadium, Total	0.00273	0.00500	0.00157	J
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 08:52
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420097.pdf	**Instrument ID**	: ICPMSQ2
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.00424	0.0100	0.00327	J
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00240	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	12.6	0.100	0.0394	
7440-47-3	Chromium, Total	0.00201	0.00100	0.00017	
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	0.0254	0.0500	0.0191	J
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	3.77	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00077	0.00100	0.00044	J
7440-02-0	Nickel, Total	0.00093	0.00200	0.00055	J
7440-09-7	Potassium, Total	0.583	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	4.49	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00050	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 09:23
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420097.pdf	**Instrument ID**	: ICPMSQ2
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0150	0.0100	0.00327	
7440-36-0	Antimony, Total	0.00202	0.00400	0.00042	J
7440-38-2	Arsenic, Total	0.00056	0.00050	0.00016	
7440-39-3	Barium, Total	0.01667	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	0.00047	0.00020	0.00005	
7440-70-2	Calcium, Total	40.6	0.100	0.0394	
7440-47-3	Chromium, Total	0.00361	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00122	0.00050	0.00016	
7440-50-8	Copper, Total	0.00165	0.00100	0.00038	
7439-89-6	Iron, Total	0.606	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	9.89	0.0700	0.0242	
7439-96-5	Manganese, Total	1.189	0.00100	0.00044	
7440-02-0	Nickel, Total	0.08383	0.00200	0.00055	
7440-09-7	Potassium, Total	9.96	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	48.8	0.100	0.0293	
7440-28-0	Thallium, Total	0.00018	0.00050	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	Lab Number	: L2042334
Project Name	: TOWN OF RAMAPO LF	Project Number	: 20010, TASK 200
Lab ID	: WG1419340-1	Date Collected	: NA
Client ID	: WG1419340-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/09/20 08:12
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: AM
Lab File ID	: WG1420097.pdf	Instrument ID	: ICPMSQ2
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/08/20

		mg/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	ND	0.00050	0.00017	U
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	ND	0.100	0.0394	U
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	ND	0.0500	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	ND	0.0700	0.0242	U
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	ND	0.100	0.0309	U
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	ND	0.100	0.0293	U
7440-28-0	Thallium, Total	ND	0.00050	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 11:52
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 11:54
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-04	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-I	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 11:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 11:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419342-1	**Date Collected**	: NA
Client ID	: WG1419342-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 11:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 19:34
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.832	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 19:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.215	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-04	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-I	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 19:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.183	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 19:39
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.343	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 19:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.872	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1418683-1	**Date Collected**	: NA
Client ID	: WG1418683-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/07/20 19:31
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.112	0.300	0.022	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1418683-3	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-IDUP	**Date Received**	: 10/05/20
Sample Location	:	**Date Analyzed**	: 10/07/20 19:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201007-B	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/06/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.209	0.300	0.066	J

Chemical Oxygen Demand Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-04	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-I	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	5.2	10	2.7	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	2.8	10	2.7	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419440-1	**Date Collected**	: NA
Client ID	: WG1419440-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/07/20 21:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419440-4	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-IDUP	**Date Received**	: 10/05/20
Sample Location	:	**Date Analyzed**	: 10/07/20 21:15
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: tlh
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Alkalinity Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-01	**Date Collected**	: 10/05/20 17:00
Client ID	: 9-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	128.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-03	**Date Collected**	: 10/05/20 15:35
Client ID	: UP-OS	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	102.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-04	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-I	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	72.0	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-05	**Date Collected**	: 10/05/20 14:50
Client ID	: UP-R	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	42.0	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042334-08	**Date Collected**	: 10/05/20 00:00
Client ID	: DUP10052020	**Date Received**	: 10/05/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	130.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1418554-1	**Date Collected**	: NA
Client ID	: WG1418554-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042334
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1418554-3	**Date Collected**	: 10/05/20 14:00
Client ID	: UP-IDUP	**Date Received**	: 10/05/20
Sample Location	:	**Date Analyzed**	: 10/07/20 11:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1418554.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	71.0	2.00	NA	

ANALYTICAL REPORT

Lab Number:	L2042977
Client:	Sterling Environmental Engineering 24 Wade Road Latham, NY 12110
ATTN:	Mark Williams
Phone:	(518) 456-4900
Project Name:	TOWN OF RAMAPO
Project Number:	20010, TASK 200
Report Date:	10/19/20

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2042977-01	9-R	WATER	HILLBURN, NY	10/05/20 17:00	10/05/20
L2042977-02	UP-OS	WATER	HILLBURN, NY	10/05/20 15:35	10/05/20
L2042977-03	UP-I	WATER	HILLBURN, NY	10/05/20 14:00	10/05/20
L2042977-04	UP-R	WATER	HILLBURN, NY	10/05/20 14:50	10/05/20
L2042977-05	EB10052020	WATER	HILLBURN, NY	10/05/20 12:45	10/05/20
L2042977-06	FB10052020	FIELD BLANK	HILLBURN, NY	10/05/20 12:40	10/05/20
L2042977-07	DUP10052020	WATER	HILLBURN, NY	10/05/20 00:00	10/05/20

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042977
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042977
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Case Narrative (continued)

Report Submission

October 19, 2020: Final Report.

October 12, 2020: Preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 10/19/20

ORGANICS

SEMIVOLATILES

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-01
Client ID: 9-R
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 17:00
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/09/20 13:26
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/08/20 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2690		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	43		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-01
Client ID: 9-R
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 17:00
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 15:40
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	41.6		ng/l	1.83	0.374	1
Perfluoropentanoic Acid (PFPeA)	9.24		ng/l	1.83	0.363	1
Perfluorobutanesulfonic Acid (PFBS)	4.00		ng/l	1.83	0.218	1
Perfluorohexanoic Acid (PFHxA)	9.41		ng/l	1.83	0.301	1
Perfluoroheptanoic Acid (PFHpA)	5.70		ng/l	1.83	0.206	1
Perfluorohexanesulfonic Acid (PFHxS)	2.22	F	ng/l	1.83	0.345	1
Perfluorooctanoic Acid (PFOA)	9.85		ng/l	1.83	0.216	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.631	1
Perfluorononanoic Acid (PFNA)	23.0		ng/l	1.83	0.286	1
Perfluorooctanesulfonic Acid (PFOS)	5.36	F	ng/l	1.83	0.462	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.279	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.594	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.238	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.898	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.532	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.737	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.341	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.300	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.227	1
PFOA/PFOS, Total	15.2		ng/l	1.83	0.216	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-01 Date Collected: 10/05/20 17:00

Client ID: 9-R Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	70		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	70		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	71		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	83		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	74		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	91		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	68		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	66		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	30		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	67		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	23		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	38		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	61		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	55		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-02
Client ID: UP-OS
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 15:35
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/09/20 13:57
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/08/20 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-02
Client ID: UP-OS
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 15:35
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 15:56
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.403	J	ng/l	1.74	0.354	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.74	0.344	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.74	0.206	1
Perfluorohexanoic Acid (PFHxA)	0.462	J	ng/l	1.74	0.285	1
Perfluoroheptanoic Acid (PFHpA)	0.302	J	ng/l	1.74	0.195	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.74	0.326	1
Perfluorooctanoic Acid (PFOA)	2.73		ng/l	1.74	0.205	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.74	1.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.74	0.597	1
Perfluorononanoic Acid (PFNA)	0.302	J	ng/l	1.74	0.271	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.74	0.437	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.74	0.264	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.74	1.05	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.74	0.562	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.74	0.226	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.74	0.850	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.74	0.503	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.74	0.698	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.74	0.323	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.74	0.284	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.74	0.215	1
PFOA/PFOS, Total	2.73		ng/l	1.74	0.205	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-02 Date Collected: 10/05/20 15:35

Client ID: UP-OS Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	59		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	92		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	68		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	57		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	89		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	76		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-03
Client ID: UP-I
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 14:00
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/09/20 14:28
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/08/20 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	39		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-03
Client ID: UP-I
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 14:00
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 16:13
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.82	0.372	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.82	0.361	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	0.217	1
Perfluorohexanoic Acid (PFHxA)	0.302	J	ng/l	1.82	0.299	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	0.343	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.82	0.215	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.82	1.21	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.82	0.627	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.284	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.82	0.459	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.277	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.82	1.10	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.590	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.893	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.529	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.733	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.339	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.298	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.226	1
PFOA/PFOS, Total	ND		ng/l	1.82	0.215	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-03 Date Collected: 10/05/20 14:00

Client ID: UP-I Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	93		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	58		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	61		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	53		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	72		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-04
Client ID: UP-R
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 14:50
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/09/20 16:05
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/08/20 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	42		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-04
Client ID: UP-R
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 14:50
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 17:03
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.83	0.373	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.83	0.362	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	0.218	1
Perfluorohexanoic Acid (PFHxA)	0.359	J	ng/l	1.83	0.300	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.83	0.206	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.83	0.344	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.83	0.216	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.630	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	0.286	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.83	0.461	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.278	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.593	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.238	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.897	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.531	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.736	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.340	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.299	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.227	1
PFOA/PFOS, Total	ND		ng/l	1.83	0.216	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-04 Date Collected: 10/05/20 14:50

Client ID: UP-R Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	60		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	83		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	76		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	56		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	45		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	71		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-05
Client ID: EB10052020
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 12:45
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 17:19
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.89	0.374	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.89	0.225	1
Perfluorohexanoic Acid (PFHxA)	0.374	J	ng/l	1.89	0.310	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.650	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.89	0.295	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.89	0.476	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.89	0.287	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.89	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.89	0.613	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.89	0.246	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.89	0.927	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.89	0.548	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.89	0.760	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.89	0.352	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.89	0.309	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.89	0.234	1
PFOA/PFOS, Total	ND		ng/l	1.89	0.223	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-05 Date Collected: 10/05/20 12:45

Client ID: EB10052020 Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	84		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	56		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	82		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	79		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	64		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	83		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	51		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	74		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-06
Client ID: FB10052020
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 12:40
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Field Blank
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 17:36
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.83	0.372	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.83	0.362	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	0.217	1
Perfluorohexanoic Acid (PFHxA)	0.332	J	ng/l	1.83	0.299	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.83	0.206	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.83	0.343	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.83	0.215	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.628	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.83	0.460	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.278	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.592	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.895	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.530	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.340	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.299	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.226	1
PFOA/PFOS, Total	ND		ng/l	1.83	0.215	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-06 Date Collected: 10/05/20 12:40

Client ID: FB10052020 Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	55		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	62		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	50		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	62		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-07
Client ID: DUP10052020
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 00:00
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/09/20 16:37
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/08/20 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	2760		ng/l	139	31.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	44		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-07
Client ID: DUP10052020
Sample Location: HILLBURN, NY

Date Collected: 10/05/20 00:00
Date Received: 10/05/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 17:52
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	41.9		ng/l	1.77	0.361	1
Perfluoropentanoic Acid (PFPeA)	9.04		ng/l	1.77	0.350	1
Perfluorobutanesulfonic Acid (PFBS)	3.49		ng/l	1.77	0.210	1
Perfluorohexanoic Acid (PFHxA)	9.52		ng/l	1.77	0.290	1
Perfluoroheptanoic Acid (PFHpA)	5.72		ng/l	1.77	0.199	1
Perfluorohexanesulfonic Acid (PFHxS)	2.23		ng/l	1.77	0.333	1
Perfluorooctanoic Acid (PFOA)	9.56		ng/l	1.77	0.209	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.77	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.77	0.609	1
Perfluorononanoic Acid (PFNA)	23.4		ng/l	1.77	0.276	1
Perfluorooctanesulfonic Acid (PFOS)	5.71	F	ng/l	1.77	0.446	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.77	0.269	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.77	1.07	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.77	0.573	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.77	0.230	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.77	0.867	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.77	0.513	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.77	0.711	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.77	0.329	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.77	0.290	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.77	0.219	1
PFOA/PFOS, Total	15.3		ng/l	1.77	0.209	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042977

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042977-07 Date Collected: 10/05/20 00:00

Client ID: DUP10052020 Date Received: 10/05/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	65		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	83		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	64		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	66		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	67		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	67		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	63		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	39		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	19		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	44		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	65		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	58		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/09/20 11:06
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/08/20 08:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-04,07 Batch: WG1419924-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	42		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 13:43
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07 Batch: WG1422452-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.416	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/16/20 13:43
Analyst: JW

Extraction Method: ALPHA 23528
Extraction Date: 10/15/20 13:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-07 Batch: WG1422452-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	86		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	81		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	89		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	68		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	69		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	65		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	71		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO

Project Number: 20010, TASK 200

Lab Number: L2042977

Report Date: 10/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-04,07		Batch: WG1419924-2		WG1419924-3			
1,4-Dioxane	105		102		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	44		47		15-110

Lab Control Sample Analysis
Batch Quality Control

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07 Batch: WG1422452-2 WG1422452-3								
Perfluorobutanoic Acid (PFBA)	109		116		67-148	6		30
Perfluoropentanoic Acid (PFPeA)	103		110		63-161	7		30
Perfluorobutanesulfonic Acid (PFBS)	94		101		65-157	7		30
Perfluorohexanoic Acid (PFHxA)	107		115		69-168	7		30
Perfluoroheptanoic Acid (PFHpA)	108		114		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	107		111		69-177	4		30
Perfluorooctanoic Acid (PFOA)	106		112		63-159	6		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	118		133		49-187	12		30
Perfluoroheptanesulfonic Acid (PFHpS)	105		110		61-179	5		30
Perfluorononanoic Acid (PFNA)	101		111		68-171	9		30
Perfluorooctanesulfonic Acid (PFOS)	114		117		52-151	3		30
Perfluorodecanoic Acid (PFDA)	106		112		63-171	6		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	124		127		56-173	2		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	111		108		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	107		120		60-153	11		30
Perfluorodecanesulfonic Acid (PFDS)	124		121		38-156	2		30
Perfluorooctanesulfonamide (FOSA)	109		115		46-170	5		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	113		119		45-170	5		30
Perfluorododecanoic Acid (PFDoA)	116		125		67-153	7		30
Perfluorotridecanoic Acid (PFTrDA)	124		125		48-158	1		30
Perfluorotetradecanoic Acid (PFTA)	118		118		59-182	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO

Project Number: 20010, TASK 200

Lab Number: L2042977

Report Date: 10/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07 Batch: WG1422452-2 WG1422452-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		86		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		91		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		84		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	90		92		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	64		64		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		86		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	66		72		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	63		67		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	55		61		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		71		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		80		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		68		33-143

Matrix Spike Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO

Project Number: 20010, TASK 200

Lab Number: L2042977

Report Date: 10/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-04,07 QC Batch ID: WG1419924-4 WG1419924-5 QC Sample: L2042977-03 Client ID: UP-I												
1,4-Dioxane	ND	4630	4940	107		5040	105		40-140	2		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		42		15-110

Matrix Spike Analysis
Batch Quality Control

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1422452-4 WG1422452-5 QC Sample: L2042977-03 Client ID: UP-I												
Perfluorobutanoic Acid (PFBA)	ND	35.6	40.0	112		40.7	113		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	ND	35.6	39.6	111		40.4	112		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	ND	31.6	32.4	102		33.0	103		65-157	2		30
Perfluorohexanoic Acid (PFHxA)	0.302J	35.6	39.6	110		41.2	113		69-168	4		30
Perfluoroheptanoic Acid (PFHpA)	ND	35.6	39.3	110		40.2	112		58-159	2		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	32.6	35.3F	108		36.3	110		69-177	3		30
Perfluorooctanoic Acid (PFOA)	ND	35.6	39.8	112		40.8	113		63-159	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	33.9	42.3F	125		41.7	121		49-187	1		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	33.9	37.4	110		39.8	116		61-179	6		30
Perfluorononanoic Acid (PFNA)	ND	35.6	39.8	112		40.2	112		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	ND	33.1	39.9F	121		40.6F	121		52-151	2		30
Perfluorodecanoic Acid (PFDA)	ND	35.6	38.9	109		38.8	108		63-171	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	34.2	44.1F	129		45.7F	132		56-173	4		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	35.6	42.7	120		43.2	120		60-166	1		30
Perfluoroundecanoic Acid (PFUnA)	ND	35.6	40.2	113		40.5	112		60-153	1		30
Perfluorodecanesulfonic Acid (PFDS)	ND	34.3	42.3	123		43.1	124		38-156	2		30
Perfluorooctanesulfonamide (FOSA)	ND	35.6	40.0	112		40.5F	112		46-170	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	35.6	42.4	119		45.6	126		45-170	7		30
Perfluorododecanoic Acid (PFDoA)	ND	35.6	42.6	120		40.9	113		67-153	4		30
Perfluorotridecanoic Acid (PFTrDA)	ND	35.6	43.5	122		43.7	121		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	ND	35.6	40.7	114		41.2	114		59-182	1		30

Matrix Spike Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042977
Report Date: 10/19/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1422452-4 WG1422452-5 QC Sample: L2042977-03 Client ID: UP-I

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	62		59		7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	63		59		1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		59		23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	58		53		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		80		40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		79		38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		80		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		91		47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		72		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		61		33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		82		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		98		16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	41		33		1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	90		84		42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		82		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		85		34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		86		31-159

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2042977-01D	Plastic 250ml unpreserved	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-01E	Plastic 250ml unpreserved	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-01I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-01J	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-02D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-02E	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-02I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-02J	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-03D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-03D1	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-03D2	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-03E	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-03E1	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-03E2	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-03I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-03I1	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-03I2	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-03J	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-03J1	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-03J2	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-04D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-04E	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2042977-04I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-04J	Amber 250ml unpreserved	NA	NA			Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-05D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-05E	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-06D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-07D	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-07E	2 Plastic/1 Plastic/1 H20 Plastic	B	NA		6.0	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042977-07I	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042977-07J	Amber 250ml unpreserved	A	7	7	2.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)

*Values in parentheses indicate holding time in days

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042977
Report Date: 10/19/20

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042977
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042977
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: DU Report with 'J' Qualifiers

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042977
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Data Qualifiers

the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042977
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/5/20

ALPHA Job #: L2042334

Client Information
Client: Sterling Environmental Engineering
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information
Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #)
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other ASP-B for PFAS + 1,4 Dioxane Only

Regulatory Requirement
☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Mark.Williams@sterlingenvironmental.com

Please specify Metals or TAL. * Part 360 Baseline Metals List

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCs 8260	TKN-4500	A2-1,4-DIOXANE-SIM	A2-NY-527-ISOTOPE	T-Alkalinity-SM 2320	COD-410.4	TAL Metals * Hardness	Sample Specific Comments	Total Bottles
-01	42334-01	10-5-2020	1700	GW	PWS	X	X	X	X	X	X	X		10
✓	-02		-	LW		X								2
✓ -03	-04		1405	GW		X	X	X	X	X	X	X		10
✓ -03	-04		1410	GW		X	X	X	X	X	X	X		10
✓ -02	-03	UP-OS	1535	GW		X	X	X	X	X	X	X		10
✓ -03	-04	UP-I	1400	GW		X	X	X	X	X	X	X		10
✓ -04	-05	UP-R	1450	GW		X	X	X	X	X	X	X		10
✓ -05	-06	EB10052020	1245	LW			X	X	X	X	X	X		2
✓ -06	-07	FB10052020	1240	LW					X					1
✓ -07	-08	DUP10052020	-	GW		X	X	X	X	X	X	X		10

Container Type	V	P	A	P	P	P	P
Preservative	B	D	A	A	A	D	C

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; K/E = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10-5-2020 17:00		
	10/5/20 17:30		
AAL	10/5/20 23:55	AAL	10/5/20 20:30
			10/5/20 23:55

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

www.alphalab.com

Alpha Analytical

Laboratory Code: 11148

SDG Number: L2042612

Table of Contents

Project Name: TOWN OF RAMAPO LF
Project Number: 20010, TASK 200

Lab Number: L2042612
Report Date: 10/13/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2042612-01	SVWC-96	WATER	HILLBURN, NY	10/06/20 09:55	10/06/20
L2042612-02	PW-1	WATER	HILLBURN, NY	10/06/20 12:50	10/06/20
L2042612-03	PW-2	WATER	HILLBURN, NY	10/06/20 13:20	10/06/20
L2042612-04	SVWC-93	WATER	HILLBURN, NY	10/06/20 09:15	10/06/20
L2042612-05	SVWC-95	WATER	HILLBURN, NY	10/06/20 10:15	10/06/20
L2042612-06	SVWC-94	WATER	HILLBURN, NY	10/06/20 09:30	10/06/20
L2042612-07	10-OS	WATER	HILLBURN, NY	10/06/20 16:10	10/06/20
L2042612-08	10-I	WATER	HILLBURN, NY	10/06/20 15:10	10/06/20
L2042612-09	10-R	WATER	HILLBURN, NY	10/06/20 14:10	10/06/20
L2042612-10	9-OS	WATER	HILLBURN, NY	10/06/20 11:15	10/06/20
L2042612-11	9-1	WATER	HILLBURN, NY	10/06/20 12:15	10/06/20
L2042612-13	TB10062020	TRIP BLANK (AQUEOUS)	HILLBURN, NY	10/06/20 00:00	10/06/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

The results of the 1,4-DIOXANE-SIM and 537-ISOTOPE analyses will be issued under separate cover.

Total Metals

The WG1419605-3 MS recovery, performed on L2042612-01, is outside the acceptance criteria for hardness (224%). A post digestion spike was performed and yielded unacceptable recoveries for hardness (218%). The serial dilution recovery was not acceptable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.

The WG1419605-4 Laboratory Duplicate RPD for hardness (191%), performed on L2042612-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Wallukeit Report Date: 10/13/20

Title: Technical Director/Representative

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries

Report Format: DU Report with 'J' Qualifiers

Data Qualifiers

when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 7890 GC/5975C MSD	Columns (length x ID x df):
Trap: Supelco K Trap (VOACARB 3000)	RTX-VMS 20m x 0.18mm x 1um
Concentrator: EST Encon (or equivalent)	RTX-VMS 30m x 0.25mm x 1.4um
Autosampler: EST Centurion (or equivalent)	RTX-502.2 40m x 0.18mm x 1um
Purge time: 11 min	

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)	Column Type: Restek RTX 502.2
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 105 Meters
Concentrator: EST Encon (or equivalent)	df: 3.00 um
Autosampler: EST Centurion (or equivalent)	ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD	Column Type: DB-VRX
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 60 Meters
Concentrator: Tekmar Velocity / EST Encon	df: 1.40 um
Autosampler: Varian Archon / EST Centurion	ID: 0.25 mm
Purge time: 11 min	Desorb: 1 min

Volatile Organics: Dissolved Gas

Instrument: Agilent 7890 (or equivalent) with FID/TCD

	Column Type: Haysep S Column
	Column Length: 2 Meters packed (100/200 mesh)
Autosampler: LEAP Headspace	Purge time: 0.6 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE / QP2020

Concentrator: Entech 7100A or 7200	Column Type: Restek RTX-1
Autosampler: Entech 7016CA or 7016D	Column Length: 60 Meters
	df: 1.00 um
	ID: 0.25 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.32 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum/EPH:

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5	df: 0.25um, 0.18 um
Column Length: 30 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (8081):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8082):

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary

Alpha Job Number : L2042612

Account Name : Sterling Environmental Engineering
Project Number : 20010, TASK 200
Project Name : TOWN OF RAMAPO LF

Received : 06-OCT-2020
Reviewer : Richard Scott

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	5.1	
B	Absent/	Ice	3.6	
C	Absent/	Ice	3.5	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between sample labels & COC?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NO**

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 13 2020, 03:58 pm

Login Number: L2042612
Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200
Received: 06OCT20 Due Date: 13OCT20

Sample #	Client ID	Mat	PR	Collected
L2042612-01	SVWC-96	S0	1	06OCT20 09:55

8260 report lsit built ASP-A Package Due Date: 10/13/20

ALK-T-2320,ASP-A,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-02	PW-1	S0	1	06OCT20 12:50

8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-03	PW-2	S0	1	06OCT20 13:20

8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-04	SVWC-93	S0	1	06OCT20 09:15

8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-05	SVWC-95	S0	1	06OCT20 10:15

8260 report lsit built Package Due Date: 10/13/20

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 13 2020, 03:58 pm

Login Number: L2042612
Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200
Received: 06OCT20 Due Date: 13OCT20

Sample #	Client ID	Mat	PR	Collected

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-06 SVWC-94 1 S0 06OCT20 09:30
8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-07 10-OS 1 S0 06OCT20 16:10
8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-08 10-I 1 S0 06OCT20 15:10
8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042612-09 10-R 1 S0 06OCT20 14:10
8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 13 2020, 03:58 pm

Login Number: L2042612

Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200
Received: 06OCT20 Due Date: 13OCT20

Sample #	Client ID	Mat	PR	Collected
L2042612-10	9-OS	S0	1	06OCT20 11:15

8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

Sample #	Client ID	Mat	PR	Collected
L2042612-11	9-1	S0	1	06OCT20 12:15

8260 report lsit built Package Due Date: 10/13/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

Sample #	Client ID	Mat	PR	Collected
L2042612-13	TB10062020	S0	1	06OCT20 00:00

8260 report lsit built Package Due Date: 10/13/20

NYTCL-8260

Logged By: Melissa Deyo

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 10/6/20

ALPHA Job #: L2042612

Client Information
Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information
Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #) ☐
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other ASP-B for PFAS+1,4-Dioxane only

Regulatory Requirement
☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
mark.williams@sterlingenvironmental.com

Please specify Metals or TAL. *PART 360 Baseline Metals LIST

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCs 8260	TKN-4500	A2-1,4-DIOXANE-SIM	A2-NY-537-ISOTOPE	T-Alkalinity-SM 2320	COD-410.4	* TAL Metals Hardness	Sample Specific Comments	Total Bottles
2042612-01	SVWC-96	10-6-2020	955	DW	PWS	X	X			X	X	X		6
-02	PW-1		1250	DW		X	X			X	X	X		6
-03	PW-2		1320	DW		X	X			X	X	X		6
-04	MW-93 SVWC-93		915	DW		X	X			X	X	X		6
-05	MW-95 SVWC-95		1015	DW		X	X	X	X	X	X	X		10
-06	BW-3 SVWC-94		930	DW		X	X	X	X	X	X	X		10
-07	~~Field Blank~~ 10-05		1610	GW		X	X	X	X	X	X	X		10
-08	Equipment Blank 10-I		1510	GW		X	X	X	X	X	X	X		10
-09	10-R		1410	GW		X	X	X	X	X	X	X		10
-10	9-05		1115	GW		X	X	X	X	X	X	X	PW	10
	Container Type					V	P	A	P	P	P	P		
	Preservative					B	D	A	A	A	D	C		

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10-6-2020 1530		
AAL	10/6/20 23:30	Kevin Law	10/6/20 23:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 10/6/20

ALPHA Job #: L2042612

Client Information

Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information

Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #) ☐
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other ASP-B for PFAS + 1,4 DIOXANE only

Billing Information

☒ Same as Client Info
PO #

Regulatory Requirement

☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Mark.williams@sterlingenvironmental.com

Please specify Metals or TAL. * Part 360 Baseline Metals List

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCs 8260	TKN-4500	A2-1,4 DIOXANE-SIM	A2-NY-537-Isotope	T-Alkalinity-SM 2320	COD-410.4	TAL Metals * itardness	Total Bottles	Sample Specific Comments
L2042612-11	9-I	10-6-2020	1215	GW	PWS	X	X	X	X	X	X	X	10	
-12	EB10062020	↓	1050	LW	PWS				X				2	
-13	TB10062020	↓	—	LW		X							2	

Sample Filtration: ☐ Done ☐ Lab to do
Preservation: ☐ Lab to do
(Please Specify below)

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	A	P	P	P	P	
Preservative	B	D	A	A	A	D	C	

Relinquished By:	Date/Time	Received By:	Date/Time
	10-6-2020 1830		
AAL	10/6/20 2330		10/6/20 2010
			10/6/20 2330

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

Organics

Volatiles Data

Volatiles Sample Data

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 16:27
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201008A21	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 16:53
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201008A22	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-03	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 17:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201008A23	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 17:43
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201008A24	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 14:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: VE201008A14	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 14:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: VE201008A15	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 15:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: VE201008A16	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 15:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: VE201008A17	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 16:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: VE201008A18	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 16:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VE201008A19	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 16:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VE201008A20	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-13	**Date Collected**	: 10/06/20 00:00
Client ID	: TB10062020	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 16:01
Sample Matrix	: Trip Blank (aqueous)	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: VG201008A20	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419793-5	**Date Collected**	: NA
Client ID	: WG1419793-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 09:38
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: VG201008A05	**Instrument ID**	: GONZO
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420186-5	**Date Collected**	: NA
Client ID	: WG1420186-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 11:18
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: VE201008A05	**Instrument ID**	: ELAINE
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 14:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	2.01	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 15:16
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	26.1	0.660	NA	

Form 1
METALS

Client	:	**Sterling Environmental Engineering**	**Lab Number**	:	**L2042612**
Project Name	:	**TOWN OF RAMAPO LF**	**Project Number**	:	**20010, TASK 200**
Lab ID	:	**L2042612-03**	**Date Collected**	:	**10/06/20 13:20**
Client ID	:	**PW-2**	**Date Received**	:	**10/06/20**
Sample Location	:	**HILLBURN, NY**	**Date Analyzed**	:	**10/12/20 15:42**
Sample Matrix	:	**WATER**	**Dilution Factor**	:	**1**
Analytical Method	:	**1,6010D**	**Analyst**	:	**GD**
Lab File ID	:	**101220.txt_icap.txt**	**Instrument ID**	:	**TRACE6**
Sample Amount	:	**50ml**	**%Solids**	:	**N/A**
Digestion Method	:	**EPA 3005A**	**Date Digested**	:	**10/08/20**

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	**Hardness**	**92.5**	**0.660**	**NA**	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 15:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	101	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 15:51
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	94.1	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 15:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	97.9	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 16:05
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	7.92	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 16:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	32.8	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 16:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	29.6	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 16:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	20.1	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 16:33
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	26.3	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419605-1	**Date Collected**	: NA
Client ID	: WG1419605-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/12/20 14:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	**Hardness**	**ND**	**0.660**	**NA**	**U**

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419605-4	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96DUP	**Date Received**	: 10/06/20
Sample Location	:	**Date Analyzed**	: 10/12/20 14:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: GD
Lab File ID	: 101220.txt_icap.txt	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	**Hardness**	**88.8**	**0.660**	**NA**	

Inorganic Data
(ICPMS Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 19:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.01210	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	26.8	0.100	0.0394	
7440-47-3	Chromium, Total	0.00040	0.00100	0.00017	J
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00673	0.00100	0.00038	
7439-89-6	Iron, Total	0.0300	0.0800	0.0191	J
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	7.07	0.0700	0.0242	
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	0.00059	0.00200	0.00055	J
7440-09-7	Potassium, Total	2.01	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	74.0	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.01186	0.01000	0.00341	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 19:41
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00526	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	7.76	0.100	0.0394	
7440-47-3	Chromium, Total	0.00035	0.00100	0.00017	J
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.03185	0.00100	0.00038	
7439-89-6	Iron, Total	0.0291	0.0800	0.0191	J
7439-92-1	Lead, Total	0.00071	0.00100	0.00034	J
7439-95-4	Magnesium, Total	2.07	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00049	0.00100	0.00044	J
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	0.947	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	17.6	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.01602	0.01000	0.00341	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-03	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 19:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00140	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	34.2	0.100	0.0394	
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00851	0.00100	0.00038	
7439-89-6	Iron, Total	0.0467	0.0800	0.0191	J
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	3.81	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00049	0.00100	0.00044	J
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	1.10	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	8.38	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.01255	0.01000	0.00341	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 19:51
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.01387	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	31.7	0.100	0.0394	
7440-47-3	Chromium, Total	0.00018	0.00100	0.00017	J
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00339	0.00100	0.00038	
7439-89-6	Iron, Total	ND	0.0800	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	8.06	0.0700	0.0242	
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	2.65	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	80.1	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.00397	0.01000	0.00341	J

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 19:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.01889	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	29.8	0.100	0.0394	
7440-47-3	Chromium, Total	0.00027	0.00100	0.00017	J
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.02050	0.00100	0.00038	
7439-89-6	Iron, Total	ND	0.0800	0.0191	U
7439-92-1	Lead, Total	0.00063	0.00100	0.00034	J
7439-95-4	Magnesium, Total	7.76	0.0700	0.0242	
7439-96-5	Manganese, Total	0.06270	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00107	0.00200	0.00055	J
7440-09-7	Potassium, Total	2.60	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	73.4	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.03337	0.01000	0.00341	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.01980	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	29.9	0.100	0.0394	
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00330	0.00100	0.00038	
7439-89-6	Iron, Total	ND	0.0800	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	7.89	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00075	0.00100	0.00044	J
7440-02-0	Nickel, Total	0.00060	0.00200	0.00055	J
7440-09-7	Potassium, Total	2.41	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	82.9	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.00541	0.01000	0.00341	J

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:06
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.359	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	0.00021	0.00050	0.00016	J
7440-39-3	Barium, Total	0.00790	0.00050	0.00017	
7440-41-7	Beryllium, Total	0.00014	0.00050	0.00010	J
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	2.68	0.100	0.0394	
7440-47-3	Chromium, Total	0.00031	0.00100	0.00017	J
7440-48-4	Cobalt, Total	0.00029	0.00050	0.00016	J
7440-50-8	Copper, Total	0.00099	0.00100	0.00038	J
7439-89-6	Iron, Total	0.181	0.0800	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	0.495	0.0700	0.0242	
7439-96-5	Manganese, Total	0.02056	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00072	0.00200	0.00055	J
7440-09-7	Potassium, Total	0.371	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	2.30	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:21
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0160	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00117	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	9.52	0.100	0.0394	
7440-47-3	Chromium, Total	0.00034	0.00100	0.00017	J
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	0.0390	0.0800	0.0191	J
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	2.81	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00047	0.00100	0.00044	J
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	0.832	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	4.23	0.100	0.0293	
7440-28-0	Thallium, Total	0.00027	0.00100	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0636	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00410	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	9.32	0.100	0.0394	
7440-47-3	Chromium, Total	0.02904	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00134	0.00050	0.00016	
7440-50-8	Copper, Total	0.00154	0.00100	0.00038	
7439-89-6	Iron, Total	0.151	0.0800	0.0191	
7439-92-1	Lead, Total	0.00125	0.00100	0.00034	
7439-95-4	Magnesium, Total	1.97	0.0700	0.0242	
7439-96-5	Manganese, Total	0.02264	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00592	0.00200	0.00055	
7440-09-7	Potassium, Total	0.720	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	4.28	0.100	0.0293	
7440-28-0	Thallium, Total	0.00016	0.00050	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:31
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.00730	0.0100	0.00327	J
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00465	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	5.94	0.100	0.0394	
7440-47-3	Chromium, Total	0.00081	0.00100	0.00017	J
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00040	0.00100	0.00038	J
7439-89-6	Iron, Total	0.0260	0.0800	0.0191	J
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	1.46	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00063	0.00100	0.00044	J
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	0.712	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	6.12	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1419622.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0201	0.0100	0.00327	
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	0.00991	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	7.90	0.100	0.0394	
7440-47-3	Chromium, Total	0.04680	0.00100	0.00017	
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	0.00081	0.00100	0.00038	J
7439-89-6	Iron, Total	0.305	0.0800	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	1.94	0.0700	0.0242	
7439-96-5	Manganese, Total	0.00587	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00077	0.00200	0.00055	J
7440-09-7	Potassium, Total	1.08	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	26.1	0.100	0.0293	
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	Lab Number	: L2042612
Project Name	: TOWN OF RAMAPO LF	Project Number	: 20010, TASK 200
Lab ID	: WG1419377-1	Date Collected	: NA
Client ID	: WG1419377-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/08/20 18:22
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: AM
Lab File ID	: WG1419622.pdf	Instrument ID	: ICPMSQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/08/20

		mg/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	ND	0.00050	0.00017	U
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	ND	0.100	0.0394	U
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	ND	0.0800	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	ND	0.0700	0.0242	U
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	ND	0.100	0.0309	U
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	ND	0.100	0.0293	U
7440-28-0	Thallium, Total	ND	0.00100	0.00014	U
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:03
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-03	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:21
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 12:28
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419342-1	**Date Collected**	: NA
Client ID	: WG1419342-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 11:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: HG100820A	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:41
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.182	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.152	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-03	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:43
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.281	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:45
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.095	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.150	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:48
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.118	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:49
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.152	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:49
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.239	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:53
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.129	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:54
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.139	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 18:55
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.165	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419655-1	**Date Collected**	: NA
Client ID	: WG1419655-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 18:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.137	0.300	0.022	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419655-3	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2DUP	**Date Received**	: 10/06/20
Sample Location	:	**Date Analyzed**	: 10/08/20 18:44
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201008-A	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.171	0.300	0.066	J

Chemical Oxygen Demand Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	2.8	10	2.7	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-03	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	2.8	10	2.7	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:15
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/07/20 21:15
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419440-1	**Date Collected**	: NA
Client ID	: WG1419440-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/07/20 21:12
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	ND	10	2.7	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419440-4	**Date Collected**	: 10/05/20 14:00
Client ID	: WG1419440-4 DUP	**Date Received**	: 10/05/20
Sample Location	:	**Date Analyzed**	: 10/07/20 21:15
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: tlh
Lab File ID	: WG1419440.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/07/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Alkalinity Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-01	**Date Collected**	: 10/06/20 09:55
Client ID	: SVWC-96	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	59.3	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-02	**Date Collected**	: 10/06/20 12:50
Client ID	: PW-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	26.6	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-03	**Date Collected**	: 10/06/20 13:20
Client ID	: PW-2	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	68.4	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-04	**Date Collected**	: 10/06/20 09:15
Client ID	: SVWC-93	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	63.0	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-05	**Date Collected**	: 10/06/20 10:15
Client ID	: SVWC-95	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	68.7	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-06	**Date Collected**	: 10/06/20 09:30
Client ID	: SVWC-94	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	64.8	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-07	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-08	**Date Collected**	: 10/06/20 15:10
Client ID	: 10-I	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	24.9	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-09	**Date Collected**	: 10/06/20 14:10
Client ID	: 10-R	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	24.2	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-10	**Date Collected**	: 10/06/20 11:15
Client ID	: 9-OS	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	14.4	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042612-11	**Date Collected**	: 10/06/20 12:15
Client ID	: 9-1	**Date Received**	: 10/06/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	28.8	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419658-1	**Date Collected**	: NA
Client ID	: WG1419658-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419658-3	**Date Collected**	: 10/07/20 10:00
Client ID	: WG1419658-3 DUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419658.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	44.8	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419795-1	**Date Collected**	: NA
Client ID	: WG1419795-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042612
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419795-3	**Date Collected**	: 10/06/20 16:10
Client ID	: 10-OSDUP	**Date Received**	: 10/06/20
Sample Location	:	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

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Alpha Analytical

Laboratory Code: 11148

SDG Number: L2042866

Table of Contents

Project Name: TOWN OF RAMAPO LF
Project Number: 20010, TASK 200

Lab Number: L2042866
Report Date: 10/14/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2042866-01	8-I	WATER	HILLBURN, NY	10/07/20 14:00	10/07/20
L2042866-02	8-R	WATER	HILLBURN, NY	10/07/20 14:40	10/07/20
L2042866-03	8-0S	WATER	HILLBURN, NY	10/07/20 16:05	10/07/20
L2042866-04	TB10072020	WATER	HILLBURN, NY	10/07/20 00:00	10/07/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

The WG1420226-3 MS recoveries for iron (67%), manganese (0%), and sodium (0%), performed on L2042866-01, do not apply because the sample concentrations are greater than four times the spike amounts added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris Report Date: 10/14/20

Title: Technical Director/Representative

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries

Report Format: DU Report with 'J' Qualifiers

Data Qualifiers

when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 7890 GC/5975C MSD	Columns (length x ID x df):
Trap: Supelco K Trap (VOACARB 3000)	RTX-VMS 20m x 0.18mm x 1um
Concentrator: EST Encon (or equivalent)	RTX-VMS 30m x 0.25mm x 1.4um
Autosampler: EST Centurion (or equivalent)	RTX-502.2 40m x 0.18mm x 1um
Purge time: 11 min	

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)	Column Type: Restek RTX 502.2
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 105 Meters
Concentrator: EST Encon (or equivalent)	df: 3.00 um
Autosampler: EST Centurion (or equivalent)	ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD	Column Type: DB-VRX
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 60 Meters
Concentrator: Tekmar Velocity / EST Encon	df: 1.40 um
Autosampler: Varian Archon / EST Centurion	ID: 0.25 mm
Purge time: 11 min	Desorb: 1 min

Volatile Organics: Dissolved Gas

Instrument: Agilent 7890 (or equivalent) with FID/TCD

	Column Type: Haysep S Column
	Column Length: 2 Meters packed (100/200 mesh)
Autosampler: LEAP Headspace	Purge time: 0.6 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE / QP2020

Concentrator: Entech 7100A or 7200	Column Type: Restek RTX-1
Autosampler: Entech 7016CA or 7016D	Column Length: 60 Meters
	df: 1.00 um
	ID: 0.25 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.32 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum/EPH:

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5	df: 0.25um, 0.18 um
Column Length: 30 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (8081):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8082):

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary

Alpha Job Number : L2042866

Account Name : Sterling Environmental Engineering
Project Number : 20010, TASK 200
Project Name : TOWN OF RAMAPO LF

Received : 07-OCT-2020
Reviewer : Chris Tebeau

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	2.9	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between sample labels & COC?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NO**

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 14 2020, 11:51 am

Login Number: L2042866
Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200
Received: 07OCT20 Due Date: 14OCT20

Sample #	Client ID	Mat	PR	Collected
L2042866-01	8-I	S0	1	07OCT20 14:00

8260 report list built ASP-A Package Due Date: 10/14/20

ALK-T-2320,ASP-A,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042866-02	8-R	S0	1	07OCT20 14:40

8260 report list built Package Due Date: 10/14/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042866-03	8-0S	S0	1	07OCT20 16:05

8260 report list built Package Due Date: 10/14/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL-6020T,AG-6020T,AL-6020T,AS-6020T,BA-6020T,BE-6020T,CA-6020T,CD-6020T,CO-6020T,CR-6020T,CU-6020T,FE-6020T,HG-T,K-6020T,MG-6020T,MN-6020T,NA-6020T,NI-6020T,PB-6020T,PREPT,SB-6020T,SE-6020T,TL-6020T,V-6020T,ZN-6020T,TKN-4500

L2042866-04	TB10072020	S0	1	07OCT20 00:00

8260 report list built Package Due Date: 10/14/20

NYTCL-8260-R2

Logged By: Melissa Deyo

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/7/20

ALPHA Job #: L2042814

Client Information
Client: Sterling Environmental
Address: 241 Wade Rd
Phone: (518) 456-4900
Fax:
Email:

Project Information
Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #)
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time
Standard: X
Rush (only if pre approved):
Due Date:
# of Days:

Deliverables
- [X] ASP-A
- [ ] ASP-B
- [ ] EQuIS (1 File)
- [ ] EQuIS (4 File)
- [ ] Other

Billing Information
- [X] Same as Client Info
PO #

Regulatory Requirement
- [X] NY TOGS
- [ ] NY Part 375
- [ ] AWQ Standards
- [ ] NY CP-51
- [ ] NY Restricted Use
- [ ] Other
- [ ] NY Unrestricted Use
- [ ] NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
- [ ] NJ
- [ ] NY
- [ ] Other:

These samples have been previously analyzed by Alpha: [ ]

Other project specific requirements/comments:
mark.williams@sterlingenvironmental.com

Please specify Metals or TAL. * Part 360 Baseline Metals

ANALYSIS

Sample Filtration
- [ ] Done
- [ ] Lab to do

Preservation
- [ ] Lab to do

(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCS 8260	TKN-4500	T-Alkalinity SM 2320	COD-410.4	TAL METALS* Hardness	Sample Specific Comments	Total Bottle
L2042814-01	8-I	10-7-2020	1400	GW	PWS	X	X	X	X	X		6
02	8-R		1440	GW		X	X	X	X	X		6
03	8-OS		1605	GW		X	X	X	X	X		6
04	TB10072020		-	LW		X						2

PWS

PWS

Container Type	V	P	P	P	P					
Preservative	B	D	A	D	C					

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Paul Mazzella	10-7-2020 1720	Paul Mazzella	10/7/20 1720
Paul Mazzella	10/7/20 2135	[illegible]	10/8/20 215

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Organics

Volatiles Data

Volatiles Sample Data

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-01	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-I	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/11/20 17:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V05201011A07	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/11/20 18:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V05201011A08	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/11/20 18:33
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V05201011A09	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-04	**Date Collected**	: 10/07/20 00:00
Client ID	: TB10072020	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 13:50
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: V05201009A16	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420463-5	**Date Collected**	: NA
Client ID	: WG1420463-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/09/20 09:34
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201009A05	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421151-5	**Date Collected**	: NA
Client ID	: WG1421151-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/11/20 17:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V05201011A05	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-01	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-I	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 19:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1420940.pdf	**Instrument ID**	: TRACE7
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	259	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 19:19
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1420940.pdf	**Instrument ID**	: TRACE7
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	533	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 19:24
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1420940.pdf	**Instrument ID**	: TRACE7
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	94.0	0.660	NA	

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420224-1	**Date Collected**	: NA
Client ID	: WG1420224-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/12/20 17:52
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1420940.pdf	**Instrument ID**	: TRACE7
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	**Hardness**	**ND**	**0.660**	**NA**	**U**

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420224-4	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-IDUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/12/20 19:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1420940.pdf	**Instrument ID**	: TRACE7
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	258.	0.660	NA	

Inorganic Data
(ICPMS Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	Lab Number	: L2042866
Project Name	: TOWN OF RAMAPO LF	Project Number	: 20010, TASK 200
Lab ID	: L2042866-01	Date Collected	: 10/07/20 14:00
Client ID	: 8-I	Date Received	: 10/07/20
Sample Location	: HILLBURN, NY	Date Analyzed	: 10/12/20 10:08
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6020B	Analyst	: AM
Lab File ID	: WG1420872.pdf	Instrument ID	: ICPMSQ
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/09/20

		mg/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	0.00400	0.0100	0.00327	J
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	0.00447	0.00050	0.00016	
7440-39-3	Barium, Total	0.03446	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	66.6	0.100	0.0394	
7440-47-3	Chromium, Total	0.00104	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00631	0.00050	0.00016	
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	9.63	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	18.4	0.0700	0.0242	
7439-96-5	Manganese, Total	3.479	0.00100	0.00044	
7440-02-0	Nickel, Total	0.00665	0.00200	0.00055	
7440-09-7	Potassium, Total	8.46	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	91.4	0.100	0.0293	
7440-28-0	Thallium, Total	0.00034	0.00100	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 10:13
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420872.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0160	0.0100	0.00327	
7440-36-0	Antimony, Total	0.00048	0.00400	0.00042	J
7440-38-2	Arsenic, Total	0.00067	0.00050	0.00016	
7440-39-3	Barium, Total	0.01437	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	0.00029	0.00020	0.00005	
7440-70-2	Calcium, Total	136.	0.100	0.0394	
7440-47-3	Chromium, Total	0.05239	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00439	0.00050	0.00016	
7440-50-8	Copper, Total	0.00402	0.00100	0.00038	
7439-89-6	Iron, Total	1.56	0.0500	0.0191	
7439-92-1	Lead, Total	0.00227	0.00100	0.00034	
7439-95-4	Magnesium, Total	66.8	0.0700	0.0242	
7439-96-5	Manganese, Total	0.5774	0.00100	0.00044	
7440-02-0	Nickel, Total	0.02297	0.00200	0.00055	
7440-09-7	Potassium, Total	2.80	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	71.5	0.100	0.0293	
7440-28-0	Thallium, Total	0.00021	0.00100	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	0.00726	0.01000	0.00341	J

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 11:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420872.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.0216	0.0100	0.00327	
7440-36-0	Antimony, Total	0.00354	0.00400	0.00042	J
7440-38-2	Arsenic, Total	0.00022	0.00050	0.00016	J
7440-39-3	Barium, Total	0.00780	0.00050	0.00017	
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	24.6	0.100	0.0394	
7440-47-3	Chromium, Total	0.06122	0.00100	0.00017	
7440-48-4	Cobalt, Total	0.00029	0.00050	0.00016	J
7440-50-8	Copper, Total	0.00161	0.00100	0.00038	
7439-89-6	Iron, Total	0.552	0.0500	0.0191	
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	6.62	0.0700	0.0242	
7439-96-5	Manganese, Total	0.1835	0.00100	0.00044	
7440-02-0	Nickel, Total	0.01766	0.00200	0.00055	
7440-09-7	Potassium, Total	1.55	0.100	0.0309	
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	26.3	0.100	0.0293	
7440-28-0	Thallium, Total	0.00045	0.00100	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420226-1	**Date Collected**	: NA
Client ID	: WG1420226-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/12/20 09:43
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420872.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	ND	0.0100	0.00327	U
7440-36-0	Antimony, Total	ND	0.00400	0.00042	U
7440-38-2	Arsenic, Total	ND	0.00050	0.00016	U
7440-39-3	Barium, Total	ND	0.00050	0.00017	U
7440-41-7	Beryllium, Total	ND	0.00050	0.00010	U
7440-43-9	Cadmium, Total	ND	0.00020	0.00005	U
7440-70-2	Calcium, Total	ND	0.100	0.0394	U
7440-47-3	Chromium, Total	ND	0.00100	0.00017	U
7440-48-4	Cobalt, Total	ND	0.00050	0.00016	U
7440-50-8	Copper, Total	ND	0.00100	0.00038	U
7439-89-6	Iron, Total	ND	0.0500	0.0191	U
7439-92-1	Lead, Total	ND	0.00100	0.00034	U
7439-95-4	Magnesium, Total	ND	0.0700	0.0242	U
7439-96-5	Manganese, Total	ND	0.00100	0.00044	U
7440-02-0	Nickel, Total	ND	0.00200	0.00055	U
7440-09-7	Potassium, Total	ND	0.100	0.0309	U
7782-49-2	Selenium, Total	ND	0.00500	0.00173	U
7440-22-4	Silver, Total	ND	0.00040	0.00016	U
7440-23-5	Sodium, Total	ND	0.100	0.0293	U
7440-28-0	Thallium, Total	0.00026	0.00100	0.00014	J
7440-62-2	Vanadium, Total	ND	0.00500	0.00157	U
7440-66-6	Zinc, Total	ND	0.01000	0.00341	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420226-4	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-IDUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/12/20 10:03
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6020B	**Analyst**	: AM
Lab File ID	: WG1420872.pdf	**Instrument ID**	: ICPMSQ
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	0.00515	0.0100	0.003	J
7440-36-0	Antimony, Total	0.00070	0.00400	0.0004	J
7440-38-2	Arsenic, Total	0.00476	0.00050	0.0002	
7440-39-3	Barium, Total	0.03308	0.00050	0.0002	
7440-41-7	Beryllium, Total	ND	0.00050	0.0001	U
7440-43-9	Cadmium, Total	ND	0.00020	0.0001	U
7440-70-2	Calcium, Total	69.2	0.100	0.039	
7440-47-3	Chromium, Total	0.00126	0.00100	0.0002	
7440-48-4	Cobalt, Total	0.00631	0.00050	0.0002	
7440-50-8	Copper, Total	ND	0.00100	0.0004	U
7439-89-6	Iron, Total	9.82	0.0500	0.019	
7439-92-1	Lead, Total	ND	0.00100	0.0003	U
7439-95-4	Magnesium, Total	18.6	0.0700	0.024	
7439-96-5	Manganese, Total	3.104	0.00100	0.0004	
7440-02-0	Nickel, Total	0.00665	0.00200	0.0006	
7440-09-7	Potassium, Total	8.72	0.100	0.031	
7782-49-2	Selenium, Total	ND	0.00500	0.002	U
7440-22-4	Silver, Total	ND	0.00040	0.0002	U
7440-23-5	Sodium, Total	78.2	0.100	0.029	
7440-28-0	Thallium, Total	0.00091	0.00100	0.0001	J
7440-62-2	Vanadium, Total	ND	0.00500	0.0016	U
7440-66-6	Zinc, Total	ND	0.01000	0.0034	U

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-01	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-I	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 19:15
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: AL
Lab File ID	: WG1420344	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 18:56
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: AL
Lab File ID	: WG1420344	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 19:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: AL
Lab File ID	: WG1420344	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420228-1	**Date Collected**	: NA
Client ID	: WG1420228-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/09/20 18:47
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: AL
Lab File ID	: WG1420344	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420228-4	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-RDUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/09/20 19:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: AL
Lab File ID	: WG1420344	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/09/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.0001	U

Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-01	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-I	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 22:05
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201009-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	3.53	0.300	--	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 22:06
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201009-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.508	0.300	--	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 22:07
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201009-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.324	0.300	--	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419785-1	**Date Collected**	: NA
Client ID	: WG1419785-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/09/20 21:51
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201009-E	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	--	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419785-4	**Date Collected**	: 10/07/20 14:00
Client ID	: WG1419785-4 DUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/09/20 22:10
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201009-E2	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	--	U

Chemical Oxygen Demand Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-01	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-I	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:39
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419898.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**--**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419898.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**--**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 20:40
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419898.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**--**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419898-1	**Date Collected**	: NA
Client ID	: WG1419898-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 20:37
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419898.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**--**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419898-4	**Date Collected**	: 10/07/20 12:50
Client ID	: WG1419898-4 DUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/08/20 20:41
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1419898.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/08/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**--**	**U**

Alkalinity Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-01	**Date Collected**	: 10/07/20 14:00
Client ID	: 8-I	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	305.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-02	**Date Collected**	: 10/07/20 14:40
Client ID	: 8-R	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	514.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2042866-03	**Date Collected**	: 10/07/20 16:05
Client ID	: 8-0S	**Date Received**	: 10/07/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	108.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419795-1	**Date Collected**	: NA
Client ID	: WG1419795-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2042866
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1419795-3	**Date Collected**	: 10/06/20 16:10
Client ID	: WG1419795-3 DUP	**Date Received**	: 10/06/20
Sample Location	:	**Date Analyzed**	: 10/08/20 08:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR
Lab File ID	: WG1419795.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

ANALYTICAL REPORT

Lab Number:	L2042996
Client:	Sterling Environmental Engineering 24 Wade Road Latham, NY 12110
ATTN:	Mark Williams
Phone:	(518) 456-4900
Project Name:	TOWN OF RAMAPO
Project Number:	20010, TASK 200
Report Date:	10/19/20

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2042996-01	SVWC-95	WATER	HILLBURN, NY	10/06/20 10:15	10/06/20
L2042996-02	SVWC-94	WATER	HILLBURN, NY	10/06/20 09:30	10/06/20
L2042996-03	10-OS	WATER	HILLBURN, NY	10/06/20 16:10	10/06/20
L2042996-04	10-I	WATER	HILLBURN, NY	10/06/20 15:10	10/06/20
L2042996-05	10-R	WATER	HILLBURN, NY	10/06/20 14:10	10/06/20
L2042996-06	9-OS	WATER	HILLBURN, NY	10/06/20 11:15	10/06/20
L2042996-07	9-1	WATER	HILLBURN, NY	10/06/20 12:15	10/06/20
L2042996-08	EB10062020	WATER	HILLBURN, NY	10/06/20 10:50	10/06/20

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042996
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042996
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Case Narrative (continued)

Report Submission

October 19, 2020: Final report.

October 14, 2020: Preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Susan E O'Neil Susan O' Neil

Title: Technical Director/Representative Date: 10/19/20

ORGANICS

SEMIVOLATILES

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-01
Client ID: SVWC-95
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 10:15
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 12:16
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	412.		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	49		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-01
Client ID: SVWC-95
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 10:15
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 21:43
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	5.72		ng/l	1.72	0.351	1
Perfluoropentanoic Acid (PFPeA)	4.88		ng/l	1.72	0.341	1
Perfluorobutanesulfonic Acid (PFBS)	3.04		ng/l	1.72	0.205	1
Perfluorohexanoic Acid (PFHxA)	4.56		ng/l	1.72	0.282	1
Perfluoroheptanoic Acid (PFHpA)	2.21		ng/l	1.72	0.194	1
Perfluorohexanesulfonic Acid (PFHxS)	0.971	J	ng/l	1.72	0.324	1
Perfluorooctanoic Acid (PFOA)	5.67		ng/l	1.72	0.203	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.72	1.15	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.72	0.592	1
Perfluorononanoic Acid (PFNA)	8.95		ng/l	1.72	0.269	1
Perfluorooctanesulfonic Acid (PFOS)	3.95		ng/l	1.72	0.434	1
Perfluorodecanoic Acid (PFDA)	0.413	J	ng/l	1.72	0.262	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.72	1.04	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.72	0.558	1
Perfluoroundecanoic Acid (PFUnA)	0.589	J	ng/l	1.72	0.224	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.72	0.844	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.72	0.499	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.72	0.692	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.72	0.320	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.72	0.282	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.72	0.214	1
PFOA/PFOS, Total	9.62		ng/l	1.72	0.203	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-01 Date Collected: 10/06/20 10:15

Client ID: SVWC-95 Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	116		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	106		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	76		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	109		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	121		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	120		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	57		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	114		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	63		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	109		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	115		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-02
Client ID: SVWC-94
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 09:30
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 12:38
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	51		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-02
Client ID: SVWC-94
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 09:30
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 21:59
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.53		ng/l	1.79	0.365	1
Perfluoropentanoic Acid (PFPeA)	4.86		ng/l	1.79	0.354	1
Perfluorobutanesulfonic Acid (PFBS)	1.90		ng/l	1.79	0.213	1
Perfluorohexanoic Acid (PFHxA)	4.60		ng/l	1.79	0.294	1
Perfluoroheptanoic Acid (PFHpA)	1.68	J	ng/l	1.79	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	0.759	J	ng/l	1.79	0.336	1
Perfluorooctanoic Acid (PFOA)	3.87		ng/l	1.79	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.79	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.79	0.616	1
Perfluorononanoic Acid (PFNA)	2.14		ng/l	1.79	0.279	1
Perfluorooctanesulfonic Acid (PFOS)	3.38		ng/l	1.79	0.451	1
Perfluorodecanoic Acid (PFDA)	0.379	J	ng/l	1.79	0.272	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.79	1.08	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.79	0.580	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.79	0.233	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.79	0.877	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.519	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.79	0.720	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.79	0.333	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.79	0.293	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.79	0.222	1
PFOA/PFOS, Total	7.25		ng/l	1.79	0.211	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-02 Date Collected: 10/06/20 09:30

Client ID: SVWC-94 Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	104		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	76		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	82		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	118		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	66		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	115		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	56		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	112		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	102		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	115		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-03
Client ID: 10-OS
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 16:10
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 13:23
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-03
Client ID: 10-OS
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 16:10
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 22:16
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.74	0.354	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.74	0.344	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.74	0.207	1
Perfluorohexanoic Acid (PFHxA)	0.330	J	ng/l	1.74	0.285	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.74	0.196	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.74	0.326	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.74	0.205	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.74	1.16	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.74	0.597	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.74	0.271	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.74	0.438	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.74	0.264	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.74	1.05	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.74	0.562	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.74	0.226	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.74	0.851	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.74	0.504	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.74	0.698	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.74	0.323	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.74	0.284	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.74	0.215	1
PFOA/PFOS, Total	ND		ng/l	1.74	0.205	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-03 Date Collected: 10/06/20 16:10

Client ID: 10-OS Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	122		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	112		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	79		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	116		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	120		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	99		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	65		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	116		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	12		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	110		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	95		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-04
Client ID: 10-I
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 15:10
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 13:45
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	48		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-04
Client ID: 10-I
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 15:10
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 22:32
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	0.324	J	ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.346	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.84	0.217	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.634	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.287	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.464	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.597	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.902	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.534	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.740	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.342	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.301	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.228	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.217	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-04 Date Collected: 10/06/20 15:10

Client ID: 10-I Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	120		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	111		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	79		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	69		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	119		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	95		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	64		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	123		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	15		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	113		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	118		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-05
Client ID: 10-R
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 14:10
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 14:08
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-05
Client ID: 10-R
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 14:10
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 22:49
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.77	0.361	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.77	0.350	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.77	0.211	1
Perfluorohexanoic Acid (PFHxA)	0.340	J	ng/l	1.77	0.290	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.77	0.199	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.77	0.333	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.77	0.209	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.77	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.77	0.609	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.77	0.276	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.77	0.446	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.77	0.269	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.77	1.07	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.77	0.574	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.77	0.230	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.77	0.868	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.77	0.513	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.77	0.712	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.77	0.329	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.77	0.290	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.77	0.220	1
PFOA/PFOS, Total	ND		ng/l	1.77	0.209	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-05 Date Collected: 10/06/20 14:10

Client ID: 10-R Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	90		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	126		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	68		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	116		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	114		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	97		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	52		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	113		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	81		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	115		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	120		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-06
Client ID: 9-OS
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 11:15
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 14:30
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	54		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-06
Client ID: 9-OS
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 11:15
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 23:05
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.62		ng/l	1.83	0.373	1
Perfluoropentanoic Acid (PFPeA)	0.460	J	ng/l	1.83	0.362	1
Perfluorobutanesulfonic Acid (PFBS)	1.14	J	ng/l	1.83	0.217	1
Perfluorohexanoic Acid (PFHxA)	1.32	J	ng/l	1.83	0.300	1
Perfluoroheptanoic Acid (PFHpA)	1.17	J	ng/l	1.83	0.206	1
Perfluorohexanesulfonic Acid (PFHxS)	0.500	J	ng/l	1.83	0.343	1
Perfluorooctanoic Acid (PFOA)	8.66		ng/l	1.83	0.216	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.628	1
Perfluorononanoic Acid (PFNA)	0.913	J	ng/l	1.83	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	3.56		ng/l	1.83	0.460	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.278	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.592	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.237	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.895	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.530	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.340	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.299	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.226	1
PFOA/PFOS, Total	12.2		ng/l	1.83	0.216	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-06 Date Collected: 10/06/20 11:15

Client ID: 9-OS Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	88		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	123		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	77		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	118		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	120		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	52		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	121		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	21		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	114		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	122		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-07
Client ID: 9-1
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 12:15
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 14:53
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-07
Client ID: 9-1
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 12:15
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 23:22
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	4.68		ng/l	1.73	0.352	1
Perfluoropentanoic Acid (PFPeA)	2.94		ng/l	1.73	0.342	1
Perfluorobutanesulfonic Acid (PFBS)	3.54		ng/l	1.73	0.205	1
Perfluorohexanoic Acid (PFHxA)	3.04		ng/l	1.73	0.283	1
Perfluoroheptanoic Acid (PFHpA)	2.83		ng/l	1.73	0.194	1
Perfluorohexanesulfonic Acid (PFHxS)	0.331	J	ng/l	1.73	0.324	1
Perfluorooctanoic Acid (PFOA)	7.03		ng/l	1.73	0.204	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.73	1.15	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.73	0.594	1
Perfluorononanoic Acid (PFNA)	1.12	J	ng/l	1.73	0.269	1
Perfluorooctanesulfonic Acid (PFOS)	4.13		ng/l	1.73	0.435	1
Perfluorodecanoic Acid (PFDA)	0.414	J	ng/l	1.73	0.262	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.73	1.05	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.73	0.559	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.73	0.224	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.73	0.846	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.73	0.500	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.73	0.694	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.73	0.321	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.73	0.282	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.73	0.214	1
PFOA/PFOS, Total	11.2		ng/l	1.73	0.204	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-07 Date Collected: 10/06/20 12:15

Client ID: 9-1 Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	135		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	112		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	125		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	121		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	102		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	114		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	133		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	118		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	126		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	113		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-08
Client ID: EB10062020
Sample Location: HILLBURN, NY

Date Collected: 10/06/20 10:50
Date Received: 10/06/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 23:39
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.90	0.387	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.90	0.376	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.90	0.226	1
Perfluorohexanoic Acid (PFHxA)	0.395	J	ng/l	1.90	0.311	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.90	0.214	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.90	0.357	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.90	0.224	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.90	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.90	0.653	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.90	0.296	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.90	0.478	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.90	0.288	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.90	1.15	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.90	0.615	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.90	0.247	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.90	0.930	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.90	0.550	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.90	0.763	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.90	0.353	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.90	0.310	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.90	0.235	1
PFOA/PFOS, Total	ND		ng/l	1.90	0.224	1

Project Name: TOWN OF RAMAPO **Lab Number:** L2042996

Project Number: 20010, TASK 200 **Report Date:** 10/19/20

SAMPLE RESULTS

Lab ID: L2042996-08 Date Collected: 10/06/20 10:50

Client ID: EB10062020 Date Received: 10/06/20

Sample Location: HILLBURN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	117		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	160		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	106		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	116		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	69		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	130		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	116		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	113		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	88		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	128		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	48		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	128		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	121		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/14/20 08:44
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 10/13/20 09:15

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-07 Batch: WG1421384-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	46		15-110

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 18:07
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-08 Batch: WG1422105-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	0.352	J	ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200
Lab Number: L2042996
Report Date: 10/19/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/15/20 18:07
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 10/14/20 16:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-08 Batch: WG1422105-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	116		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	156		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	99		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	106		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	116		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	87		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	133		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	116		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	111		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	130		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	131		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	64		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	124		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	124		33-143

Lab Control Sample Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO

Project Number: 20010, TASK 200

Lab Number: L2042996

Report Date: 10/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-07		Batch: WG1421384-2 WG1421384-3					
1,4-Dioxane	94		97		40-140	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	50		50		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO

Project Number: 20010, TASK 200

Lab Number: L2042996

Report Date: 10/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab	Associated sample(s): 01-08		Batch: WG1422105-2 WG1422105-3					
Perfluorobutanoic Acid (PFBA)	99		100		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	98		101		63-161	3		30
Perfluorobutanesulfonic Acid (PFBS)	94		98		65-157	4		30
Perfluorohexanoic Acid (PFHxA)	101		102		69-168	1		30
Perfluoroheptanoic Acid (PFHpA)	100		101		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	79		79		69-177	0		30
Perfluorooctanoic Acid (PFOA)	99		100		63-159	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	98		102		49-187	4		30
Perfluoroheptanesulfonic Acid (PFHpS)	86		91		61-179	6		30
Perfluorononanoic Acid (PFNA)	99		100		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	96		98		52-151	2		30
Perfluorodecanoic Acid (PFDA)	99		103		63-171	4		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	104		104		56-173	0		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106		105		60-166	1		30
Perfluoroundecanoic Acid (PFUnA)	95		94		60-153	1		30
Perfluorodecanesulfonic Acid (PFDS)	114		120		38-156	5		30
Perfluorooctanesulfonamide (FOSA)	99		99		46-170	0		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	108		112		45-170	4		30
Perfluorododecanoic Acid (PFDoA)	91		94		67-153	3		30
Perfluorotridecanoic Acid (PFTrDA)	105		115		48-158	9		30
Perfluorotetradecanoic Acid (PFTA)	97		102		59-182	5		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: TOWN OF RAMAPO

Project Number: 20010, TASK 200

Lab Number: L2042996

Report Date: 10/19/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-08 Batch: WG1422105-2 WG1422105-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	118		118		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	155		156		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	109		106		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	101		100		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	107		108		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		108		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	117		115		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	95		99		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	136		133		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	120		115		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	117		117		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	142		133		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	102		103		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	137		138		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	62		70		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	112		122		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	138		132		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	136		133		33-143

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2042996-01A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-01B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-01C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-01D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-02A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-02B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-02C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-02D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-03A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-03B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-03C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-03D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-04A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-04B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-04C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-04D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-05A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-05B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-05C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-05D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-06A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-06B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2042996-06C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-06D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-07A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-07B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-07C	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-07D	Amber 250ml unpreserved	C	7	7	3.5	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2042996-08A	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)
L2042996-08B	Plastic 250ml unpreserved	B	NA		3.6	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: TOWN OF RAMAPO
Project Number: 20010, TASK 200

Lab Number: L2042996
Report Date: 10/19/20

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042996
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042996
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: DU Report with 'J' Qualifiers

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042996
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

Data Qualifiers

the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name:	TOWN OF RAMAPO	**Lab Number:**	L2042996
Project Number:	20010, TASK 200	**Report Date:**	10/19/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 10/6/20

ALPHA Job #: L2042612

Client Information
Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information
Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #) ☐
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other ASP-B for PFAS+1,4-DIOXANE only

Regulatory Requirement
☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
mark.williams@sterlingenvironmental.com

Please specify Metals or TAL. *PART 360 Baseline Metals LIST

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCs 8260	TKN-4500	A2-1,4-DIOXANE-SIM	A2-NY-537-ISOTOPE	T-Alkalinity-SM 2320	COD-410.4	TAL Metals + Hardness	Sample Specific Comments	Total Bottles
L2042612-01	SVWC-96	10-6-2020	955	DW	PWS	X	X			X	X	X		6
-02	PW-1		1250	DW		X	X			X	X	X		6
-03	PW-2		1320	DW		X	X			X	X	X		6
-04	SVWC-93		915	DW		X	X			X	X	X		6
-05	SVWC-95		1015	DW		X	X	X	X	X	X	X		10
-06	SVWC-94		930	DW		X	X	X	X	X	X	X		10
-07	Field Blank 10-05		1610	GW		X	X	X	X	X	X	X		10
-08	Equipment Blank 10-I		1510	GW		X	X	X	X	X	X	X		10
-09	10-R		1410	GW		X	X	X	X	X	X	X		10
-10	9-05		1115	GW		X	X	X	X	X	X	X		10

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code:
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	A	P	P	P	P						
Preservative	B	D	A	A	A	D	C						

Relinquished By:	Date/Time	Received By:	Date/Time
	10-6-2020 1530		
AAL	10/6/20 23:30	Kevin Law	10/6/20 23:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 10/6/20

ALPHA Job #: L2042996

Client Information
Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information
Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #)
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☒ Other ASP-B for PFAS + 1,4 DIOXANE only

Regulatory Requirement
☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Mark.williams@sterlingenvironmental.com

Please specify Metals or TAL: * Part 360 Baseline Metals List

ANALYSIS
NYTCL-VOCs 8260 | TKN-4500 | A2-1,4 DIOXANE-SIM | A2-NY-537-Isotope | T-Alkalinity-SM 2320 | COD-410.4 | TAL Metals * Hardness

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottles

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total Bottles
-07	9-I	10-6-2020	1215	GW	PWS		10
-08	EB10062020		1050	LW	PWS		2
-09	TB10062020		—	LW			2

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	A	P	P	P	P
Preservative	B	D	A	A	A	D	C

Relinquished By:	Date/Time	Received By:	Date/Time
	10-6-2020 1830	AAL	10/6/20 2010
AAL	10/6/20 2330		10/6/20 2330

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

www.alphalab.com

Alpha Analytical

Laboratory Code: 11148

SDG Number: L2043214

Table of Contents

Project Name: TOWN OF RAMAPO LF
Project Number: 20010, TASK 200

Lab Number: L2043214
Report Date: 10/15/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2043214-01	1-OS	WATER	HILLBURN, NY	10/08/20 11:55	10/08/20
L2043214-02	2-OS	WATER	HILLBURN, NY	10/08/20 10:45	10/08/20
L2043214-03	3-OS/1	WATER	HILLBURN, NY	10/08/20 14:20	10/08/20
L2043214-04	4-OS	WATER	HILLBURN, NY	10/08/20 09:40	10/08/20
L2043214-05	7-OS	WATER	HILLBURN, NY	10/08/20 16:10	10/08/20
L2043214-06	TB10082020	WATER	HILLBURN, NY	10/08/20 00:00	10/08/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Report Date: 10/15/20

Title: Technical Director/Representative

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries

Report Format: DU Report with 'J' Qualifiers

Data Qualifiers

when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 7890 GC/5975C MSD	Columns (length x ID x df):
Trap: Supelco K Trap (VOACARB 3000)	RTX-VMS 20m x 0.18mm x 1um
Concentrator: EST Encon (or equivalent)	RTX-VMS 30m x 0.25mm x 1.4um
Autosampler: EST Centurion (or equivalent)	RTX-502.2 40m x 0.18mm x 1um
Purge time: 11 min	

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)	Column Type: Restek RTX 502.2
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 105 Meters
Concentrator: EST Encon (or equivalent)	df: 3.00 um
Autosampler: EST Centurion (or equivalent)	ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD	Column Type: DB-VRX
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 60 Meters
Concentrator: Tekmar Velocity / EST Encon	df: 1.40 um
Autosampler: Varian Archon / EST Centurion	ID: 0.25 mm
Purge time: 11 min	Desorb: 1 min

Volatile Organics: Dissolved Gas

Instrument: Agilent 7890 (or equivalent) with FID/TCD

	Column Type: Haysep S Column
	Column Length: 2 Meters packed (100/200 mesh)
Autosampler: LEAP Headspace	Purge time: 0.6 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE / QP2020

Concentrator: Entech 7100A or 7200	Column Type: Restek RTX-1
Autosampler: Entech 7016CA or 7016D	Column Length: 60 Meters
	df: 1.00 um
	ID: 0.25 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.32 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum/EPH:

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5	df: 0.25um, 0.18 um
Column Length: 30 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (8081):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8082):

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary

Alpha Job Number : L2043214

Account Name : Sterling Environmental Engineering
Project Number : 20010, TASK 200
Project Name : TOWN OF RAMAPO LF

Received : 08-OCT-2020
Reviewer : Chris Tebeau

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.6	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between sample labels & COC?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NO**

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 15 2020, 04:57 pm

Login Number: L2043214
Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200
Received: 08OCT20 Due Date: 15OCT20

Sample #	Client ID	Mat	PR	Collected
L2043214-01	1-OS	S0	1	08OCT20 11:55

Report list built for 8260 (1,1-DCA, VC, Benzene, Chlorobenzene) ASP-A Package Due Date: 10/15/20

ALK-T-2320,ASP-A,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TKN-4500

L2043214-02	2-OS	S0	1	08OCT20 10:45

Report list built for 8260 (1,1-DCA, VC, Benzene, Chlorobenzene) Package Due Date: 10/15/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TKN-4500

L2043214-03	3-OS/1	S0	1	08OCT20 14:20

Report list built for 8260 (1,1-DCA, VC, Benzene, Chlorobenzene) Package Due Date: 10/15/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TKN-4500

L2043214-04	4-OS	S0	1	08OCT20 09:40

Report list built for 8260 (1,1-DCA, VC, Benzene, Chlorobenzene) Package Due Date: 10/15/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TKN-4500

L2043214-05	7-OS	S0	1	08OCT20 16:10

Report list built for 8260 (1,1-DCA, VC, Benzene, Chlorobenzene) Package Due Date: 10/15/20

ALK-T-2320,COD-410-LOW,HARDT,NYTCL-8260-R2,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TKN-4500

L2043214-06	TB10082020	S0	1	08OCT20 00:00

Report list built for 8260 (1,1-DCA, VC, Benzene, Chlorobenzene) Package Due Date: 10/15/20

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 15 2020, 04:57 pm

Login Number: L2043214

Account: STERLINGENV Sterling Environmental EngineeringProject: 20010, TASK 200

Received: 08OCT20 Due Date: 15OCT20

Sample #	Client ID	Mat	PR	Collected

NYTCL-8260-R2

Logged By: Melissa Deyo

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/9/20

ALPHA Job #: L2093241

Client Information
Client: Sterling Environmental Engineerin
Address: 24 Wade Rd
Latham, NY 12110
Phone: 518-456-4900
Fax: 518-456-3532
Email:

Project Information
Project Name: Town of Ramapo LF
Project Location: Hillburn, NY
Project #: 20010, Task 200
(Use Project name as Project #)
Project Manager: Mark Williams
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☒ Same as Client Info
PO #

Regulatory Requirement
☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other: NA

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
mark.williams@sterlingenvironmental.com *Report only site specific VOCs i,1-Dichloroethane; Vinyl Chloride, Benzene, Chlorobenzene

Please specify Metals or TAL. ** Part 360 Baseline Metals List

ANALYSIS
Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	NYTCL-VOCs 8260 *	TKN-4500	~~A21-1,4-Dioxane-SIM~~	~~A21-Ethanol~~	T-Alkalinity-SM 2320	COD-410.4	TAL Metals ** Hardness	Sample Specific Comments	Total Bottles
L2093241-01	1-OS	10-8-2020	1155	GW		X	X			X	X	X		6
02	2-OS		1045	GW		X	X			X	X	X		6
03	3-OS/I		1420	GW		X	X			X	X	X		6
04	4-OS		940	GW		X	X			X	X	X		6
05	7-OS		1610	GW		X	X			X	X	X		6
06	~~8-OS~~ TB10082020	↓	-	GW	↓	X								2
	~~11-OS~~													
	~~RW-3~~													
	~~MW-5~~													
	~~MW-6~~													

PWS PWS PWS

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	P	A	P	P	P	P	
Preservative	B	D	A	A	A	D	C	

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10/8/2020 1857	[signature]	10/8/20 22:15
[signature]	10/8/20 22:15	[signature]	10/9/20 00:55

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS.

Form No: 01-25 (rev. 30-Sept-2013)

Organics

Volatiles Data

Volatiles Sample Data

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-01	**Date Collected**	: 10/08/20 11:55
Client ID	: 1-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 11:41
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201013A13	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-02	**Date Collected**	: 10/08/20 10:45
Client ID	: 2-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 12:04
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201013A14	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-03	**Date Collected**	: 10/08/20 14:20
Client ID	: 3-OS/1	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 12:27
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201013A15	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-04	**Date Collected**	: 10/08/20 09:40
Client ID	: 4-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 12:51
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: V05201013A16	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-05	**Date Collected**	: 10/08/20 16:10
Client ID	: 7-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 13:14
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: LAC
Lab File ID	: V05201013A17	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-06	**Date Collected**	: 10/08/20 00:00
Client ID	: TB10082020	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 11:17
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201013A12	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Results Summary
Form 1
Volatile Organics by GC/MS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421467-5	**Date Collected**	: NA
Client ID	: WG1421467-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/13/20 08:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: PD
Lab File ID	: V05201013A05	**Instrument ID**	: VOA105
Sample Amount	: 10 ml	**GC Column**	: RTX-502.2
Level	: LOW	**%Solids**	: N/A
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-34-3	1,1-Dichloroethane	ND	2.5	0.70	U
108-90-7	Chlorobenzene	ND	2.5	0.70	U
71-43-2	Benzene	ND	0.50	0.16	U
75-01-4	Vinyl chloride	ND	1.0	0.07	U

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-02	**Date Collected**	: 10/08/20 10:45
Client ID	: 2-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/14/20 18:52
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1421911.pdf	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	284	0.660	NA	
7429-90-5	Aluminum, Total	0.108	0.100	0.032	
7440-36-0	Antimony, Total	ND	0.050	0.007	U
7440-38-2	Arsenic, Total	ND	0.005	0.002	U
7440-39-3	Barium, Total	0.046	0.010	0.002	
7440-41-7	Beryllium, Total	ND	0.005	0.001	U
7440-43-9	Cadmium, Total	ND	0.005	0.001	U
7440-70-2	Calcium, Total	95.2	0.100	0.035	
7440-47-3	Chromium, Total	0.094	0.010	0.002	
7440-48-4	Cobalt, Total	ND	0.020	0.002	U
7440-50-8	Copper, Total	0.020	0.010	0.002	
7439-89-6	Iron, Total	1.05	0.050	0.009	
7439-92-1	Lead, Total	ND	0.010	0.003	U
7439-95-4	Magnesium, Total	11.2	0.100	0.015	
7439-96-5	Manganese, Total	0.026	0.010	0.002	
7440-02-0	Nickel, Total	0.025	0.025	0.002	J
7440-09-7	Potassium, Total	10.5	2.50	0.237	
7782-49-2	Selenium, Total	ND	0.010	0.004	U
7440-22-4	Silver, Total	ND	0.007	0.003	U
7440-23-5	Sodium, Total	24.8	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.020	0.003	U
7440-62-2	Vanadium, Total	ND	0.010	0.002	U
7440-66-6	Zinc, Total	0.003	0.050	0.002	J

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-03	**Date Collected**	: 10/08/20 14:20
Client ID	: 3-OS/1	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/14/20 18:57
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1421911.pdf	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	250	0.660	NA	
7429-90-5	Aluminum, Total	0.975	0.100	0.032	
7440-36-0	Antimony, Total	ND	0.050	0.007	U
7440-38-2	Arsenic, Total	ND	0.005	0.002	U
7440-39-3	Barium, Total	0.034	0.010	0.002	
7440-41-7	Beryllium, Total	ND	0.005	0.001	U
7440-43-9	Cadmium, Total	ND	0.005	0.001	U
7440-70-2	Calcium, Total	81.4	0.100	0.035	
7440-47-3	Chromium, Total	3.19	0.010	0.002	
7440-48-4	Cobalt, Total	0.008	0.020	0.002	J
7440-50-8	Copper, Total	0.018	0.010	0.002	
7439-89-6	Iron, Total	13.6	0.050	0.009	
7439-92-1	Lead, Total	ND	0.010	0.003	U
7439-95-4	Magnesium, Total	11.3	0.100	0.015	
7439-96-5	Manganese, Total	1.50	0.010	0.002	
7440-02-0	Nickel, Total	0.711	0.025	0.002	
7440-09-7	Potassium, Total	3.91	2.50	0.237	
7782-49-2	Selenium, Total	ND	0.010	0.004	U
7440-22-4	Silver, Total	ND	0.007	0.003	U
7440-23-5	Sodium, Total	60.8	2.00	0.120	
7440-28-0	Thallium, Total	0.005	0.020	0.003	J
7440-62-2	Vanadium, Total	0.012	0.010	0.002	
7440-66-6	Zinc, Total	0.009	0.050	0.002	J

Form 1
METALS

Client	: Sterling Environmental Engineering	Lab Number	: L2043214
Project Name	: TOWN OF RAMAPO LF	Project Number	: 20010, TASK 200
Lab ID	: L2043214-04	Date Collected	: 10/08/20 09:40
Client ID	: 4-OS	Date Received	: 10/08/20
Sample Location	: HILLBURN, NY	Date Analyzed	: 10/14/20 19:02
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: BV
Lab File ID	: WG1421911.pdf	Instrument ID	: TRACE6
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/12/20

		mg/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
NONE	Hardness	215	0.660	NA	
7429-90-5	Aluminum, Total	0.055	0.100	0.032	J
7440-36-0	Antimony, Total	ND	0.050	0.007	U
7440-38-2	Arsenic, Total	ND	0.005	0.002	U
7440-39-3	Barium, Total	0.016	0.010	0.002	
7440-41-7	Beryllium, Total	ND	0.005	0.001	U
7440-43-9	Cadmium, Total	ND	0.005	0.001	U
7440-70-2	Calcium, Total	56.2	0.100	0.035	
7440-47-3	Chromium, Total	0.106	0.010	0.002	
7440-48-4	Cobalt, Total	ND	0.020	0.002	U
7440-50-8	Copper, Total	ND	0.010	0.002	U
7439-89-6	Iron, Total	1.18	0.050	0.009	
7439-92-1	Lead, Total	ND	0.010	0.003	U
7439-95-4	Magnesium, Total	18.0	0.100	0.015	
7439-96-5	Manganese, Total	0.463	0.010	0.002	
7440-02-0	Nickel, Total	0.064	0.025	0.002	
7440-09-7	Potassium, Total	1.94	2.50	0.237	J
7782-49-2	Selenium, Total	ND	0.010	0.004	U
7440-22-4	Silver, Total	ND	0.007	0.003	U
7440-23-5	Sodium, Total	51.8	2.00	0.120	
7440-28-0	Thallium, Total	ND	0.020	0.003	U
7440-62-2	Vanadium, Total	ND	0.010	0.002	U
7440-66-6	Zinc, Total	0.006	0.050	0.002	J

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-05	**Date Collected**	: 10/08/20 16:10
Client ID	: 7-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/14/20 23:08
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1421911.pdf	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Hardness	128	0.660	NA	
7429-90-5	Aluminum, Total	1.82	0.100	0.032	
7440-36-0	Antimony, Total	ND	0.050	0.007	U
7440-38-2	Arsenic, Total	ND	0.005	0.002	U
7440-39-3	Barium, Total	0.040	0.010	0.002	
7440-41-7	Beryllium, Total	ND	0.005	0.001	U
7440-43-9	Cadmium, Total	ND	0.005	0.001	U
7440-70-2	Calcium, Total	36.5	0.100	0.035	
7440-47-3	Chromium, Total	0.573	0.010	0.002	
7440-48-4	Cobalt, Total	0.046	0.020	0.002	
7440-50-8	Copper, Total	0.012	0.010	0.002	
7439-89-6	Iron, Total	5.31	0.050	0.009	
7439-92-1	Lead, Total	ND	0.010	0.003	U
7439-95-4	Magnesium, Total	8.95	0.100	0.015	
7439-96-5	Manganese, Total	0.586	0.010	0.002	
7440-02-0	Nickel, Total	0.011	0.025	0.002	J
7440-09-7	Potassium, Total	3.80	2.50	0.237	
7782-49-2	Selenium, Total	ND	0.010	0.004	U
7440-22-4	Silver, Total	ND	0.007	0.003	U
7440-23-5	Sodium, Total	12.0	2.00	0.120	
7440-28-0	Thallium, Total	0.004	0.020	0.003	J
7440-62-2	Vanadium, Total	0.007	0.010	0.002	J
7440-66-6	Zinc, Total	0.007	0.050	0.002	J

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421045-1	**Date Collected**	: NA
Client ID	: WG1421045-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/14/20 17:31
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: WG1421911.pdf	**Instrument ID**	: TRACE6
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7440-38-2	Arsenic, Total	ND	0.005	0.002	U

Form 1
METALS

Client	: Sterling Environmental Engineering	Lab Number	: L2043214
Project Name	: TOWN OF RAMAPO LF	Project Number	: 20010, TASK 200
Lab ID	: WG1421045-1	Date Collected	: NA
Client ID	: WG1421045-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/14/20 15:17
Sample Matrix	: WATER	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: BV
Lab File ID	: wg1421896.pdf	Instrument ID	: TRACE4
Sample Amount	: 50ml	%Solids	: N/A
Digestion Method	: EPA 3005A	Date Digested	: 10/12/20

		mg/l			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
NONE	Hardness	ND	0.660	NA	U
7429-90-5	Aluminum, Total	ND	0.100	0.032	U
7440-36-0	Antimony, Total	ND	0.050	0.007	U
7440-39-3	Barium, Total	ND	0.010	0.002	U
7440-41-7	Beryllium, Total	ND	0.005	0.001	U
7440-43-9	Cadmium, Total	ND	0.005	0.001	U
7440-70-2	Calcium, Total	ND	0.100	0.035	U
7440-47-3	Chromium, Total	ND	0.010	0.002	U
7440-48-4	Cobalt, Total	ND	0.020	0.002	U
7440-50-8	Copper, Total	ND	0.010	0.002	U
7439-89-6	Iron, Total	ND	0.050	0.009	U
7439-92-1	Lead, Total	ND	0.010	0.003	U
7439-95-4	Magnesium, Total	ND	0.100	0.015	U
7439-96-5	Manganese, Total	ND	0.010	0.002	U
7440-02-0	Nickel, Total	ND	0.025	0.002	U
7440-09-7	Potassium, Total	ND	2.50	0.237	U
7782-49-2	Selenium, Total	ND	0.010	0.004	U
7440-22-4	Silver, Total	ND	0.007	0.003	U
7440-23-5	Sodium, Total	ND	2.00	0.120	U
7440-28-0	Thallium, Total	ND	0.020	0.003	U
7440-62-2	Vanadium, Total	ND	0.010	0.002	U
7440-66-6	Zinc, Total	ND	0.050	0.002	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421045-4	**Date Collected**	: 10/07/20 10:45
Client ID	: WG1421045-4 DUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/14/20 15:34
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: BV
Lab File ID	: wg1421896.pdf	**Instrument ID**	: TRACE4
Sample Amount	: 50ml	**%Solids**	: N/A
Digestion Method	: EPA 3005A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-89-6	Iron, Total	0.045	0.050	0.009	J

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-01	**Date Collected**	: 10/08/20 11:55
Client ID	: 1-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 10:42
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-02	**Date Collected**	: 10/08/20 10:45
Client ID	: 2-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 10:51
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-03	**Date Collected**	: 10/08/20 14:20
Client ID	: 3-OS/1	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 10:58
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-04	**Date Collected**	: 10/08/20 09:40
Client ID	: 4-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 11:00
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-05	**Date Collected**	: 10/08/20 16:10
Client ID	: 7-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 11:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421047-1	**Date Collected**	: NA
Client ID	: WG1421047-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/13/20 11:05
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.00009	U

Form 1
METALS

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421047-4	**Date Collected**	: 10/08/20 11:55
Client ID	: 1-OSDUP	**Date Received**	: 10/08/20
Sample Location	:	**Date Analyzed**	: 10/13/20 10:46
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 1,7470A	**Analyst**	: EW
Lab File ID	: WG1421335	**Instrument ID**	: FIMS4
Sample Amount	: 25ml	**%Solids**	: N/A
Digestion Method	: EPA 7470A	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.00020	0.0001	U

Wet Chemistry

Total Kjeldahl Nitrogen Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-01	**Date Collected**	: 10/08/20 11:55
Client ID	: 1-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 21:01
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.434	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-02	**Date Collected**	: 10/08/20 10:45
Client ID	: 2-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 21:02
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	1.51	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-03	**Date Collected**	: 10/08/20 14:20
Client ID	: 3-OS/1	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 21:03
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.766	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-04	**Date Collected**	: 10/08/20 09:40
Client ID	: 4-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 21:04
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.226	0.300	0.066	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-05	**Date Collected**	: 10/08/20 16:10
Client ID	: 7-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/13/20 21:05
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.319	0.300	0.066	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420977-1	**Date Collected**	: NA
Client ID	: WG1420977-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/13/20 20:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	ND	0.300	0.022	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420977-3	**Date Collected**	: 10/07/20 10:30
Client ID	: WG1420977-3 DUP	**Date Received**	: 10/08/20
Sample Location	:	**Date Analyzed**	: 10/13/20 20:57
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,4500NH3-H	**Analyst**	: AT
Lab File ID	: NH320201013-D	**Instrument ID**	: LACHAT
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	Nitrogen, Total Kjeldahl	0.924	0.300	0.066	

Chemical Oxygen Demand Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-01	**Date Collected**	: 10/08/20 11:55
Client ID	: 1-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 20:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	19.	10	2.7	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-02	**Date Collected**	: 10/08/20 10:45
Client ID	: 2-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 20:35
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	38.	10	2.7	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-03	**Date Collected**	: 10/08/20 14:20
Client ID	: 3-OS/1	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 20:36
Sample Matrix	: WATER	**Dilution Factor**	: 4
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	86.	40	11.	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-04	**Date Collected**	: 10/08/20 09:40
Client ID	: 4-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 20:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	2.8	10	2.7	J

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-05	**Date Collected**	: 10/08/20 16:10
Client ID	: 7-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/12/20 20:36
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	Chemical Oxygen Demand	26.	10	2.7	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421150-1	**Date Collected**	: NA
Client ID	: WG1421150-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/12/20 20:32
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**ND**	**10**	**2.7**	**U**

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1421150-4	**Date Collected**	: 10/07/20 09:15
Client ID	: WG1421150-4 DUP	**Date Received**	: 10/07/20
Sample Location	:	**Date Analyzed**	: 10/12/20 20:37
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 44,410.4	**Analyst**	: TLH
Lab File ID	: WG1421150.csv	**Instrument ID**	: GENSYS10VI
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	: 10/12/20

		mg/l			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
COD	**Chemical Oxygen Demand**	**9.8**	**10**	**2.7**	**J**

Alkalinity Analysis

Results

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-01	**Date Collected**	: 10/08/20 11:55
Client ID	: 1-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JB
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	351.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-02	**Date Collected**	: 10/08/20 10:45
Client ID	: 2-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JB
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	296.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-03	**Date Collected**	: 10/08/20 14:20
Client ID	: 3-OS/1	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JB
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	249.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-04	**Date Collected**	: 10/08/20 09:40
Client ID	: 4-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JB
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	123.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: L2043214-05	**Date Collected**	: 10/08/20 16:10
Client ID	: 7-OS	**Date Received**	: 10/08/20
Sample Location	: HILLBURN, NY	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JB
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	120.	2.00	NA	

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420159-1	**Date Collected**	: NA
Client ID	: WG1420159-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JB
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	ND	2.00	NA	U

Form 1
WETCHEM

Client	: Sterling Environmental Engineering	**Lab Number**	: L2043214
Project Name	: TOWN OF RAMAPO LF	**Project Number**	: 20010, TASK 200
Lab ID	: WG1420159-3	**Date Collected**	: 10/08/20 10:00
Client ID	: WG1420159-3 DUP	**Date Received**	: 10/08/20
Sample Location	:	**Date Analyzed**	: 10/09/20 09:26
Sample Matrix	: WATER	**Dilution Factor**	: 1
Analytical Method	: 121,2320B	**Analyst**	: BR/JBL
Lab File ID	: WG1420159.csv	**Instrument ID**	:
Sample Amount	:	**%Solids**	: N/A
Digestion Method	:	**Date Digested**	:

		mg CaCO3/L			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
471-34-1	Alkalinity, Total	119.	2.00	NA	

APPENDIX E

LABORATORY ANALYTICAL RESULTS - LEACHATE / GROUNDWATER

Rockland County

Ed Day, Rockland County Executive

ROCKLAND COUNTY SEWER DISTRICT #1
4 Route 340
Orangeburg, New York 10962
Phone: (845) 365-6111 Fax: (845) 365-6686
RCSD@co.rockland.ny.us

George Hoehmann
Chairman

Dianne T. Philipps, P.E.
Executive Director

October 28, 2019

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO
OCT 31 2019
DEPARTMENT OF PUBLIC WORKS

Re: Wastewater Analysis Report/s - 2019

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on September 18, 2019. The sampling is conducted to comply with the requirements of the Wastewater Discharge Permit and the Pretreatment Program. The charges for such services as deemed applicable by the District will be billed to you in the early part of 2020.

Should you have any questions or need additional information please call this office.

Very truly yours

Joan Roth
Compliance Administrator

Encl

CC: D. T. Philipps, PE M.R. Saber, PE

File: Ramapo Landfill (P) - 2019
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1
4 Route 340
Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 09/18/19 Sample ID: IS-190918-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.9	09/18/19	GA	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	1	09/24/19	GA	SM 5210 B
CHEMCAL OXYGEN DEMAND (mg/L)	41	09/19/19	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	<1.0	09/19/19	SH	SM 2540 D
Other Analyses	See Attached			

I certify under penalty of law that the documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Linda Hoffman October 28, 2019
Linda Hoffman
Laboratory Director
NYSDOH ID No. 10447

No. of pages in this report: **11**

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED: **RAMAPO LANDFILL, Hillburn** **(Permit No. 9 - Expired: 8/14/2020)**

SEMI-ANNUAL

LOCATION SAMPLED: Manhole immediately upstream of wetwell near road

ID Format (YY - MM - DD)

SAMPLE ID NO. IS-190918 --RLF

pH CALIBRATION DATE: 1st 9/17/19 2nd 9/18/19 TIME: 1st 6:55AM 2nd 7:00AM ANALYST: 1st DA 2nd DA

Buffer 4 Reading: 4.00 Buffer 7 Reading: 7.01 Buffer 10 Reading: 10.04 Slope: 96% Buffer 7 Reading: 7.03

*****NOTE: If the collected sample is not within the range of 5.0 - 11.0 SU.
Notify the Discharger immediately.
Name of Person Notified:_____
If a violation; the sample collected should be brought back to the Lab for pH check.
pH:_____ Temp. 0C _____
Time:_____ Done By:_____

SAMPLE INFORMATION

COMPOSITE	DATE	TIME	SAMPLER'S SIGNATURE	pH	TEMP. (°C)
START	9/17/19	11:11AM	DA	6.80	21.6
END	9/18/19	10:31AM	DA	6.86	23.5

TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME NEEDED mL	BOD, COD, TSS (unpreserved)	METALS (HNO_3)	CHLORIDES (unpreserved)	TDS (unpreserved)	AMMONIA (H_2SO_4)	TKN (H_2SO_4)	T. Phosphorous (H_2SO_4)	TOTAL FREE CYANIDE (NaOH)	Formaldehyde (none)	PHENOL (H_2SO_4)	Oil and Grease, TPH (HZSO4)	VOCs, EPA 624, (HCl)	SEMI-VOLATILES, EPA625 (Unpreserved)	PCB's & Pesticides (unpreserved)
COMP.	PLASTIC	1	1000	X													
COMP.	PLASTIC	1	250		X												
COMP.	PLASTIC	1	500			X											
COMP.	PLASTIC	1	500				X										
COMP.	PLASTIC	1	500					X									
COMP.	PLASTIC	1	500						X								
COMP.	PLASTIC	1	500							X							
GRAB	PLASTIC	1	1000								X						
GRAB	AMBER	1	1000									X					
GRAB	AMBER	1	1000										X				
GRAB	AMBER	1	250											X			
GRAB	Glass Vial	2	40												X		
GRAB	Glass Amber	2	1000													X	
GRAB	Glass Amber	2	1000														X

ICE IN SAMPLE COOLER? *Circle* (YES) or NO

SAMPLES IN PROPER CONTAINERS? *Circle* (YES) or NO

NOTE: IF "NO" ICE IS CIRCLED OR SAMPLES ARE NOT COLLECTED & PRESERVED IN PROPER CONTAINERS, NOTIFY LAB DIRECTOR IMMEDIATELY. RE-SAMPLE UNLESS INSTRUCTED OTHERWISE BY LAB DIRECTOR AND RECORD SUCH IN "COMMENTS" SPACE BELOW.

SAMPLE/S RELINQUISHED BY: Donovan Abraham DATE: 9/18/19 TIME: 12:40pm

SAMPLE/S RECEIVED BY: _____ DATE: 9/18/19 TIME: 12:40pm

COMMENTS: ***Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, Zn***

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CERTIFICATION

Client Name: Rockland County Sewer District #1	Date of Report:	10/15/19
4 Route 340	AAT Project Number:	036499
Orangeburg, NY 10962	Client Project Name:	RC190918
	Sampled by:	Rockland County Sewer District #1
	Matrix:	Non-Potable Water
	Date Received:	09/18/19

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Stancu
Technical Director

37 Ramland Road, Orangeburg, New York 10962
Tel: 800-259-9532, 201-484-7461 Fax: 845-818-3593 E-mail: aat@aatec.com

AAT
Advanced Analytical Technologies Inc.

ACCREDITED IN ACCORDANCE WITH nelac

Samples Summary

Client Name: Rockland County Sewer District #1	Date of Report:	10/15/19
4 Route 340	AAT Project Number:	036499
Orangeburg, NY 10962	Client Project Name:	RC190918
	Sampled by:	Rockland County Sewer District #1
	Matrix:	Non-Potable Water
	Date Received:	09/18/19

Parameter	Lab Sample ID	Client Sample ID	Sampling Method	Sampling Date/Time
Metals	WW-96082-1	IS-190918-RLF	Composite	09/18/19 11:11-10:31
Chloride (Cl)	WW-96082-2	IS-190918-RLF	Composite	09/18/19 11:11-10:31
Total Dissolved Solids (TDS)	WW-96082-3	IS-190918-RLF	Composite	09/18/19 11:11-10:31
Ammonia as N	WW-96082-4	IS-190918-RLF	Composite	09/18/19 11:11-10:31
Kjeldahl Nitrogen	WW-96082-5	IS-190918-RLF	Composite	09/18/19 11:11-10:31
Phosphorus Total	WW-96082-6	IS-190918-RLF	Composite	09/18/19 11:11-10:31
Cyanide, Amenable	WW-96082-7	IS-190918-RLF	Grab	09/18/19
Cyanide, Total	WW-96082-7	IS-190918-RLF	Grab	09/18/19
Formaldehyde	WW-96082-8	IS-190918-RLF	Grab	09/18/19
Semivolatile Organic Compounds (SVOC)	WW-96082-9	IS-190918-RLF	Grab	09/18/19
Pesticides/PCBs	WW-96082-10	IS-190918-RLF	Grab	09/18/19
Phenols	WW-96082-11	IS-190918-RLF	Grab	09/18/19
Oil & Grease	WW-96082-12	IS-190918-RLF	Grab	09/18/19
Total Petroleum Hydrocarbons (TPH)	WW-96082-12	IS-190918-RLF	Grab	09/18/19
Volatile Organic Compounds (VOC)	WW-96082-13	IS-190918-RLF	Grab	09/18/19

Reviewed and approved by:

George Stancu
Technical Director

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AAT
Advanced Analytical Technologies Inc.

ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Client Name:	Rockland County Sewer District #1	Date of Report:	10/15/19
	4 Route 340	AAT Project Number:	036499
	Orangeburg, NY 10962	Client Project Name:	RC190918
		Sampled by:	Rockland County Sewer District #1
		Sampling Date:	09/18/19
		Matrix:	Non-Potable Water
		Date Received:	09/18/19

Parameter	Lab Sample ID	Client Sample ID	Result	Unit	RLs	Date of Analysis	Analyst	Method
Metals	WW-96082-1	IS-190918-RLF	See Table #5	mg/L	-	-	-	-
Chloride (Cl)*	WW-96082-2	IS-190918-RLF	311	mg/L	15.0*	09/23/19	-	SM 19 4500CLE-11
Total Dissolved Solids (TDS)*	WW-96082-3	IS-190918-RLF	890	mg/L	10*	09/23/19	-	SM 2540C-11
Ammonia as N*	WW-96082-4	IS-190918-RLF	0.06	mg/L	0.05*	09/25/19	-	EPA 350.1
Kjeldahl Nitrogen*	WW-96082-5	IS-190918-RLF	0.21	mg/L	0.10*	09/24/19	-	EPA 351.1
Phosphorus Total*	WW-96082-6	IS-190918-RLF	0.351	mg/L	0.010*	09/25/19	-	SM 4500PE-11
Cyanide, Amenable**	WW-96082-7	IS-190918-RLF	0.012	mg/L	0.0050**	09/30/19	-	SM 4500CN G-2011
Total Cyanide**	WW-96082-7	IS-190918-RLF	0.013	mg/L	0.0020**	09/27/19	-	KELADA-01
Formaldehyde*	WW-96082-8	IS-190918-RLF	See Attached Report	ug/L	-	-	-	-
Semivolatile Organic Compounds (SVOC)	WW-96082-9	IS-190918-RLF	See Table #2 & 3	ug/L	-	-	G. Stancu	EPA 625
Pesticides/PCBs	WW-96082-10	IS-190918-RLF	See Table #4	ug/L	-	-	G. Stancu	EPA 608
Phenols*	WW-96082-11	IS-190918-RLF	ND	mg/L	0.015*	09/23/19	-	EPA 420.4
Oil & Grease**	WW-96082-12	IS-190918-RLF	ND	mg/L	4.0**	09/25/19	-	EPA 1664B
Total Petroleum Hydrocarbons (TPH)*	WW-96082-12	IS-190918-RLF	ND	mg/L	4.0**	09/25/19	-	EPA 1664B
Volatile Organic Compounds (VOC)	WW-96082-13	IS-190918-RLF	See Table #1	ug/L	-	-	G. Stancu	EPA 624

*Analysis was performed by Phoenix Environmental Laboratories Inc., 587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040.
NY Lab Registration #11301
*RL/PQL = Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation)
*ND = Not Detected, BRL = Below Reporting Limit

**Analysis was performed ALS Environmental, 301 Fulling Mill Road, Middletown, PA 17057, NY Lab Certification No. NY 11759
**RDL - Reporting Detection Limit
**ND - Not Detected - indicates that the analyte was Not Detected at the RDL

I = The recovery of the Laboratory Control Sample (LCS) associated to this analyte was outside of the established control limits

Reviewed and approved by:

George Stancu
Technical Director

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ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Table 1: VOLATILE ORGANICS DATA SHEET
Method: EPA 624

Client Name:	Rockland County Sewer District #1	Date/Time Sampled:	09/18/19
Client Sample ID:	IS-190918-RLF	Date Analyzed:	10/01/19
Lab Sample ID.:	WW-96082-13	Preparation Method:	EPA 624
AAT Project No.:	036499	Dilution Factor:	1

Compound Name	LOD (ug/L)	Result (ug/L)		Compound Name	LOD (ug/L)	Result (ug/L)
Benzene	0.41	ND		1,1-dichloroethene	0.88	ND
Bromodichloromethane	0.25	ND		trans-1,2-dichloroethene	0.81	ND
Bromoform	0.57	ND		1,2-Dichloropropane	0.42	ND
Bromomethane	0.55	ND		cis-1,3-dichloropropene	0.59	ND
Carbon tetrachloride	0.67	ND		trans-1,3-dichloropropene	0.53	ND
Chlorobenzene	0.35	ND		Dichlorofluoromethane	0.61	ND
Chloroethane	0.39	ND		Ethylbenzene	0.28	ND
2-chloroethylvinyl ether	0.26	ND		Methylene chloride	0.46	ND
Chloroform	0.34	4.41 J		1,1,2,2-Tetrachloroethane	0.48	ND
Chloromethane	0.68	ND		Tetrachloroethene	0.64	ND
Dibromochloromethane	0.59	ND		Toluene	0.53	ND
1,2-dichlorobenzene	0.42	ND		1,1,1-trichloroethane	0.47	ND
1,3-dichlorobenzene	0.41	ND		1,1,2-trichloroethane	0.64	ND
1,4-dichlorobenzene	0.42	ND		Trichloroethene	0.33	ND
1,1-dichloroethane	0.51	ND		Trichlorofluoromethane	0.47	ND
1,2-dichloroethane	0.32	ND		Vinyl chloride	0.50	ND

LOD = Limit of Detection
A result of "ND" indicates that the analyte was Not Detected at the Limit of Detection
"J" indicates a value that is greater than LOD but less than the lowest calibration standard and the result is an estimated value
"D" = Diluted; "B" = Compound also found in the Lab Blank

Reviewed and approved by:

George Stancu
Technical Director

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ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Table 2: Semivolatile Organic Compounds (Base Neutral Extractables)
Method: EPA 625

Client Name:	Rockland County Sewer District #1	Date/Time Sampled:	09/18/19
Client Sample ID:	TS-190918-RLF	Date Extracted:	09/24/19
Lab Sample ID.:	WW-96082-9	Extraction Method:	EPA 625
AAT Project No.:	036499	Date Analyzed:	10/09/19
Sample Size:	1 liter	pH:	>11
Matrix:	Non-Potable Water	Dilution Factor:	1

Compound Name	LOD (ug/L)	Result (ug/L)		Compound Name	LOD (ug/L)	Result (ug/L)
Acenaphthene	1.18	ND		Diethylphthalate	0.91	0.93 J
Acenaphthylene	1.07	ND		Dimethylphthalate	1.20	ND
Anthracene	1.44	ND		2,4-Dinitrotoluene	0.88	ND
Benzidine	1.33	ND		2,6-Dinitrotoluene	1.13	ND
Benzo[a]anthracene	0.97	ND		Di-n-octylphthalate	0.77	ND
Benzo[b]Fluoranthene	1.28	ND		Fluoranthene	0.75	ND
Benzo[a]pyrene	1.24	ND		Fluorene	1.17	ND
Benzo[g,h,I]perylene	0.98	ND		Hexachlorobenzene	1.04	ND
Benzo[k]Fluoranthene	1.23	ND		Hexachlorobutadiene	1.16	ND
Bis[2-chloroethoxy]methane	1.42	ND		Hexachlorocyclopentadiene	1.94	ND
Bis[2-chloroethyl]ether	1.25	ND		Hexachloroethane	0.85	ND
Bis[2-chloroisopropyl]ether	0.97	ND		Indenol[1,2,3-cd]pyrene	0.80	ND
Bis[2-ethylhexyl]phthalate	0.29	1.86 J		Isophorone	1.43	ND
4-Bromophenyl-phenylether	1.05	ND		N-Nitrosodi-n-propylamine	1.23	ND
Butylbenzylphthalate	0.85	ND		N-Nitrosodimethylamine	1.31	ND
2-chloronaphthalene	1.30	ND		N-Nitrosodiphenylamine	1.21	ND
4-Chlorophenyl-phenylether	0.96	ND		Naphthalene	0.95	ND
Chrysene	1.25	ND		Nitrobenzene	1.10	ND
Di-n-Butylphthalate	1.01	1.38 J		Phenanthrene	1.31	ND
3,3'-Dichlorobenzidine	1.14	ND		Pyrene	1.13	ND
Dibenzo[a,h]anthracene	0.84	ND		1,2,4-Trichlorobenzene	1.21	ND

LOD = Limit of Detection
A result of "ND" indicates that the analyte was Not Detected at the Limit of Detection
"J" indicates a value that is greater than LOD but less than the lowest calibration standard and the result is an estimated value
"D" = Diluted; "B" = Compound also found in the Lab Blank

Reviewed and approved by:

George Stancu
Technical Director

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Advanced Analytical Technologies Inc.

ACCREDITED IN ACCORDANCE WITH NELAC

ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Table 3: Semivolatile Organic Compounds (Acid Extractables)
Method: EPA 625

Client Name:	Rockland County Sewer District #1	Date/Time Sampled:	09/18/19
Client Sample ID:	IS-190918-RLF	Date Extracted:	09/24/19
Lab Sample ID.:	WW-96082-9	Extraction Method:	EPA 625
AAT Project No.:	036499	Date Analyzed:	10/09/19
Sample Size:	1 liter	pH:	<2
Matrix:	Non-Potable Water	Dilution Factor:	1

Compound Name	LOD (ug/L)	Result (ug/l)		Compound Name	LOD (ug/l)	Result (ug/l)
4-Chloro-3-Methylphenol	1.52	ND		2-Nitrophenol	0.94	ND
2-Chlorophenol	1.01	ND		4-Nitrophenol	1.82	ND
2,4-Dichlorophenol	1.50	ND		Pentachlorophenol	1.87	ND
2,4-Dimethylphenol	1.31	ND		Phenol	1.39	ND
4,6-Dinitro-2-methylphenol	0.83	ND		2,4,6-Trichlorophenol	1.62	ND
2,4-Dinitrophenol	1.74	ND				

LOD = Limit of Detection
A result of "ND" indicates that the analyte was Not Detected at the Limit of Detection
"J" indicates a value that is greater than LOD but less than the lowest calibration standard and the result is an estimated value
"D" = Diluted; "B" = Compound also found in the Lab Blank

Reviewed and approved by:

George Stancu
Technical Director

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ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Table 4: Pesticides and PCB's
Method: EPA 608

Client Name:	Rockland County Sewer District #1	Date/Time Sampled:	09/18/19
Client Sample ID:	IS-190918-RLF	Date Extracted:	09/24/19
Lab Sample ID.:	WW-96082-10	Extraction Method:	EPA 608
AAT Project No.:	036499	Date Analyzed:	10/11/19
Sample Size:	1 liter	pH:	6.0-9.0
Matrix:	Non-Potable Water	Dilution Factor:	1

Compound Name	LOD (ug/L)	Result (ug/L)		Compound Name	LOD (ug/L)	Result (ug/L)
Aldrin	0.20	ND		Endrin	0.10	ND
Alpha-BHC	0.10	ND		Endrin aldehyde	0.20	ND
Beta-BHC	0.10	ND		Heptachlor	0.19	ND
Gamma-BHC (Lindane)	0.10	ND		Heptachlor Epoxide	0.10	ND
Delta-BHC	0.20	ND		Toxaphene	0.72	ND
Chlordane	0.72	ND		Methoxychlor	0.20	ND
4, 4'-DDD	0.20	ND		PCB-1016	0.40	ND
4, 4'-DDE	0.10	ND		PCB-1221	0.88	ND
4,4'-DDT	0.30	ND		PCB-1232	0.88	ND
Dieldrin	0.10	ND		PCB-1242	0.81	ND
Alpha-Endosulfan	0.10	ND		PCB-1248	0.79	ND
Beta-Endosulfan	0.10	ND		PCB-1254	0.88	ND
Endosulfan sulfate	0.20	ND		PCB-1260	0.20	ND

LOD = Limit of Detection
A result of "ND" indicates that the analyte was Not Detected at the Limit of Detection
"J" indicates a value that is greater than LOD but less than the lowest calibration standard and the result is an estimated value
"D" = Diluted; "B" = Compound also found in the Lab Blank

Reviewed and approved by:

George Stancu
Technical Director

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ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Table 5: METALS

Parameter	Lab Sample ID	Client Sample ID	Result	Unit	RLs	Date of Analysis	Analyst	Method
Antimony (Sb)*	WW-96082-1	IS-190918-RLF	ND	mg/l	0.003*	09/25/19	-	EPA 200.7
Arsenic (As)*	WW-96082-1	IS-190918-RLF	ND	mg/l	0.002*	09/25/19	-	EPA 200.7
Beryllium (Be)*	WW-96082-1	IS-190918-RLF	ND	mg/l	0.001*	09/25/19	-	EPA 200.7
Boron (B)*	WW-96082-1	IS-190918-RLF	0.12	mg/l	0.030*	09/25/19	-	EPA 200.7
Cadmium (Cd)	WW-96082-1	IS-190918-RLF	ND	mg/l**	0.001	10/08/19	G. Stancu	SM 3111 B
Chromium (Cr)	WW-96082-1	IS-190918-RLF	ND	mg/l**	0.011	09/24/19	G. Stancu	SM 3111 B
Copper (Cu)	WW-96082-1	IS-190918-RLF	ND	mg/l	0.010	09/24/19	G. Stancu	SM 3111 B
Lead (Pb)	WW-96082-1	IS-190918-RLF	ND	mg/l**	0.016	09/26/19	G. Stancu	SM 3111 B
Manganese (Mn)	WW-96082-1	IS-190918-RLF	0.080	mg/l	0.025	10/01/19	G. Stancu	SM 3111 B
Mercury (Hg)	WW-96082-1	IS-190918-RLF	ND	mg/l	0.001	10/04/19	G. Stancu	EPA 245.1
Total Mercury Digestion	WW-96082-1	IS-190918-RLF	Completed	-	-	10/04/19	G. Stancu	EPA 245.1
Molybdenum (Mo)*	WW-96082-1	IS-190918-RLF	ND	mg/l	0.003*	09/25/19	-	EPA 200.7
Nickel (Ni)	WW-96082-1	IS-190918-RLF	0.087	mg/l**	0.010	09/25/19	G. Stancu	SM 3111 B
Selenium (Se)*	WW-96082-1	IS-190918-RLF	ND	mg/l	0.005*	09/25/19	-	EPA 200.7
Silver (Ag)	WW-96082-1	IS-190918-RLF	ND	mg/l	0.010	10/08/19	G. Stancu	SM 3111 B
Thallium (Tl)	WW-96082-1	IS-190918-RLF	ND	mg/l**	0.033	10/08/19	G. Stancu	SM 3111 B
Zinc (Zn)	WW-96082-1	IS-190918-RLF	ND	mg/l	0.010	09/24/19	G. Stancu	SM 3111 B
Total Metals Digestion	WW-96082-1	IS-190918-RLF	Completed	-	-	09/23/19	G. Stancu	EPA 200.2

RLs = Laboratory Reporting/Quantitation Limit
When "**" is present immediately following the "RLs" units, the "RLs" is the Method Detection Limit (MDL).
A result of "ND" indicates the concentration of the analyte tested was either not detected or below the RLs
"B" indicates a value that is >than MDL but< than laboratory quantitation limit

*Analyses were performed by Phoenix Environmental Laboratories Inc., 587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040.
NY Lab Registration #11301
*RL/PQL = Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation)
*ND = Not Detected, BRL = Below Reporting Limit RDL
*Total Metals Digestion was completed on 09/23/19

Reviewed and approved by:

George Stancu
Technical Director

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Orangeburg, NY 10962
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NELAP CERTIFIED, NY LAB ID: 11713, NJDEP LAB ID: NY100

CHAIN OF CUSTODY

PAGE 1 OF 1

Company Name: Rockland County Sewer District #1
Address: 4 Route 340 Orangeburg, NY 10962
Contact Name: Linda Hoffman
Tel/Fax: 845-305-4626
Sampler's Name/Affiliation: (Print)
Sampler's Signature:

Client Project Name: RC190918
Client Project Number: RC190918
Client Purchase Order No:
Project Mgr. Name:
Send Invoice to:
AAT Project No: 036499.

FOR LABORATORY USE ONLY

QTY	PRESERVATION	pH CHECK
7	Unpreserved	7.13, 7.13, 7.11, 7.11
	Ascorbic/HCl Vials	7.11
2	HCl Vials	
	HCl	
1	HNO_3	<2
4	H_2SO_4	<2 +1
1	NaOH	7.12
	NaOH/Zn Acetate	
	$Na_2S_2O_3$	

SZ

SAMPLE LOCATION / FIELD ID	LAB SAMPLE ID	DATE	COLLECTION TIME Start	TIME End	SAMPLE TYPE comp	grab	NUMBER OF PRESERVED CONTAINERS MATRIX	TOTAL	NONE	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	NaOH/Zn Acetate	OTHER	ANALYSIS REQUESTED
As per L. Hoffman LW																	
TS-190918-Lot RLF	WW-96082 (1-13)	9/18/19	11:11A	10:31A	V		W	16		1							Metals (16) B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ag, Mo, Ni, Se, Ag, Tl, Zn
					V				2								Chlorides, TDS
					X							3					Ammonia, TKN, Total phosphorous
				BG Dup L.H.	LW X	X							1				Cyanide - Total + Free
						V			5								Formaldehyde, Semi volatiles,
						X											PCB's, Pesticides
						X						2					Phenols, Oil + Grease, TPH
						V					2						VOC's

MATRIX CODES: DW: DRINKING WATER, GW: GROUND WATER, WW: NON POTABLE WATER, SW: SOIL, SL: SLUDGE, SOL: NON SOIL SOLID, O: OTHER

SPECIAL INSTRUCTIONS

TURNAROUND TIME: [X] STANDARD 2 WEEKS [ ] RUSH. LABORATORY APPROVAL REQUIRED

REPORT FORMAT: [X] RESULTS ONLY [ ] NJ REDUCED [ ] ELECTRONIC DATA DELIVERABLES

RELINQUISHED BY (Print): Linda Hoffman	DATE: 9/18/19	RECEIVED BY (Print):	DATE:	FIELD ANALYSIS	
Signature:	TIME: 12:20 AM PM	Signature:	TIME: AM PM	SAMPLE TEMP:	
RELINQUISHED BY (Print):	DATE: 9/18/19	RECEIVED BY (Print): S. Logan	DATE:	SAMPLE pH:	
Signature:	TIME: 12:41 AM PM	Signature:	TIME: AM PM	RES. Cl: Yes No	
RELINQUISHED BY (Print):	DATE:	RECEIVED BY (Print):	DATE:	Cooler Temp. upon receipt at lab: 4°C	
Signature:	TIME: AM PM	Signature:	TIME: AM PM	Rec'd on ice? Yes No	

White - Original Yellow - Laboratory Copy Pink - Client Copy

Rockland County

Ed Day, Rockland County Executive

ROCKLAND COUNTY SEWER DISTRICT NO. 1
4 Route 340
Orangeburg, New York 10962
Phone: (845) 365-6111 Fax: (845) 365-6686
RCSD@co.rockland.ny.us

George Hoehmann
Chairman

Michael R. Saber, P.E.
Assistant Director/Acting Executive Director

March 30, 2020

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

Re: Wastewater Analysis Report/s - 2020

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on February 19, 2020. The sampling is conducted to comply with the requirements of the Wastewater Discharge Permit and the Pretreatment Program. The charges for such services as deemed applicable by the District will be billed to you in the early part of 2021.

Should you have any questions or need additional information please call this office.

Very truly yours

Joan Roth
Compliance Administrator

Encl

CC: M.R. Saber, PE

File: Ramapo Landfill (P) - 2020
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1
4 Route 340
Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 2/19/2020 Sample ID: IS-200219-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.45	02/19/2020	SH	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	1.5	02/25/2020	SH	SM 5210 B
CHEMCAL OXYGEN DEMAND (mg/L)	32	02/25/2020	BC	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	<1.0	02/20/2020	BC	SM 2540 D
Other Analyses	See Attached			

I certify under penalty of law that the documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Linda Hoffman March 20, 2020
Linda Hoffman
Laboratory Director
NYSDOH ID No. 10447

No. of pages in this report: **13**

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED: **RAMAPO LANDFILL, Hillburn** **(Permit No. 9 - Expired: 8/14/2020)**

SEMI-ANNUAL

LOCATION SAMPLED: Manhole immediately upstream of wetwell near road

SAMPLE ID NO. IS-- 2002 19 --RLF (ID Format (YY - MM - DD))

pH CALIBRATION DATE: 1st 2/18/20 2nd 2/19/20 TIME: 1st 7:00A 2nd 7:00A ANALYST: 1st SH 2nd SH

Buffer 4 Reading: 4.01 Buffer 7 Reading: 7.00 Buffer 10 Reading: 10.05 Slope: 100 Buffer 7 Reading: 7.00

*****NOTE: If the collected sample is not within the range of 5.0 - 11.0 SU
Notify the Discharger immediately.
Name of Person Notified:
If a violation, the sample collected should be brought back to the Lab for pH check.
pH: Temp. 0C:
Time: Done By:

SAMPLE INFORMATION

COMPOSITE	DATE	TIME	SAMPLER'S SIGNATURE	pH	TEMP. (°C)
START	2/18/20	11:10A	[redacted]	6.34	9.3
END	2/19/20	8:36A	[redacted]	6.45	6.2

TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME NEEDED mL	BOD, COD, TSS (unpreserved)	METALS (HNO3)	CHLORIDES (unpreserved)	TDS (unpreserved)	AMMONIA (H2SO4)	TKN (H2SO4)	T-Phosphorous (H2SO4)	TOTAL FREE CYANIDE (NaOH)	Formaldehyde (none)	PHENOL (H2SO4)	Oil and Grease, TPH (H2SO4)	VOCs, EPA 624, (HCl)	SEMI-VOLATILES, EPA625 (Unpreserved)	PCB's & Pesticides (unpreserved)
COMP.	PLASTIC	1	1000	X													
COMP.	PLASTIC	1	250		X												
COMP.	PLASTIC	1	500			X											
COMP.	PLASTIC	1	500				X										
COMP.	PLASTIC	1	500					X									
COMP.	PLASTIC	1	500						X								
COMP.	PLASTIC	1	500							X							
GRAB	PLASTIC	1	100								X						
GRAB	AMBER	1	1000									X					
GRAB	AMBER	1	1000										X				
GRAB	AMBER	1	250											X			
GRAB	Glass Vial	2	40												X		
GRAB	Glass Amber	2	1000													X	
GRAB	Glass Amber	2	1000														X

ICE IN SAMPLE COOLER? Circle (YES) or NO

SAMPLES IN PROPER CONTAINERS? Circle (YES) or NO

NOTE: IF "NO" ICE IS CIRCLED OR SAMPLES ARE NOT COLLECTED & PRESERVED IN PROPER CONTAINERS, NOTIFY LAB DIRECTOR IMMEDIATELY. RE-SAMPLE UNLESS INSTRUCTED OTHERWISE BY LAB DIRECTOR AND RECORD SUCH IN "COMMENTS" SPACE BELOW.

SAMPLE/S RELINQUISHED BY: [redacted] DATE: 2/19/20 TIME: 10:30A

SAMPLE/S RECEIVED BY: Donna Abraham DATE: 2/19/2020 TIME: 10:30 AM

COMMENTS: *Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, Zn*

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Advanced Analytical Technologies Inc.

ACCREDITED IN ACCORDANCE WITH

Samples Summary

Client Name: Rockland County Sewer District #1	Date of Report:	03/16/20
4 Route 340	AAT Project Number:	037018
Orangeburg, NY 10962	Client Project Name:	RC200219
	Sampled by:	Rockland County Sewer District #1
	Matrix:	Non-Potable Water
	Date/Time Received:	02/19/20 15:22

Parameter	Lab Sample ID	Client Sample ID	Sampling Method	Sampling Date/Time
Metals	WW-98285-1	IS-200219-RLF	Composite	02/19/20 11:10-08:36
Chloride (Cl)	WW-98285-2	IS-200219-RLF	Composite	02/19/20 11:10-08:36
Total Dissolved Solids (TDS)	WW-98285-3	IS-200219-RLF	Composite	02/19/20 11:10-08:36
Ammonia as N	WW-98285-4	IS-200219-RLF	Composite	02/19/20 11:10-08:36
Kjeldahl Nitrogen	WW-98285-5	IS-200219-RLF	Composite	02/19/20 11:10-08:36
Phosphorus Total	WW-98285-6	IS-200219-RLF	Composite	02/19/20 11:10-08:36
Cyanide, Amenable	WW-98285-7	IS-200219-RLF	Grab	02/19/20
Cyanide, Total	WW-98285-7	IS-200219-RLF	Grab	02/19/20
Formaldehyde	WW-98285-8	IS-200219-RLF	Grab	02/19/20
Semivolatile Organic Compounds (SVOC)	WW-98285-9	IS-200219-RLF	Grab	02/19/20
Pesticides/PCBs	WW-98285-10	IS-200219-RLF	Grab	02/19/20
Phenols	WW-98285-11	IS-200219-RLF	Grab	02/19/20
Oil & Grease	WW-98285-12	IS-200219-RLF	Grab	02/19/20
Total Petroleum Hydrocarbons (TPH)	WW-98285-12	IS-200219-RLF	Grab	02/19/20
Volatile Organic Compounds (VOC)	WW-98285-13	IS-200219-RLF	Grab	02/19/20

Reviewed and approved by:

Slava Kogan, Designee for
George Stancu
Technical Director

37 Ramland Road, Orangeburg, New York 10962
Tel: 800-259-9532, 201-484-7461 Fax: 845-818-3593 E-mail: aat@aatec.com

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ACCREDITED IN ACCORDANCE WITH

ANALYTICAL REPORT

NYS DOH LABORATORY ID NO: 11713

Client Name:	Rockland County Sewer District #1	Date of Report:	03/16/20
	4 Route 340	AAT Project Number:	037018
	Orangeburg, NY 10962	Client Project Name:	RC200219
		Sampled by:	Rockland County Sewer District #1
		Sampling Date:	02/19/20
		Matrix:	Non-Potable Water
		Date/Time Received:	02/19/20 15:22

Parameter	Lab Sample ID	Client Sample ID	Result	Unit	RLs	Date of Analysis	Analyst	Method
Metals	WW-98285-1	IS-200219-RLF	See Table #1	mg/L	-	-	-	-
Chloride (Cl)*	WW-98285-2	IS-200219-RLF	161	mg/L	6.0*	02/20/20	-	SM 19 4500CLE-11
Total Dissolved Solids (TDS)*	WW-98285-3	IS-200219-RLF	540	mg/L	20*	02/24/20	-	SM 2540C-11
Ammonia as N*	WW-98285-4	IS-200219-RLF	0.17	mg/L	0.05*	02/22/20	-	EPA 350.1
Kjeldahl Nitrogen*	WW-98285-5	IS-200219-RLF	0.37	mg/L	0.10*	02/25/20	-	EPA 351.1
Phosphorus Total*	WW-98285-6	IS-200219-RLF	0.850	mg/L	0.010*	02/21/20	-	SM 4500PE-11
Cyanide, Amenable**	WW-98285-7	IS-200219-RLF	ND[1]	mg/L	0.010**	02/27/20	-	SM 4500CN G-2011
Total Cyanide**	WW-98285-7	IS-200219-RLF	ND	mg/L	0.010**	02/27/20	-	EPA 335.4
Formaldehyde*	WW-98285-8	IS-200219-RLF	See Attached Report	ug/L	-	-	-	-
Semivolatile Organic Compounds (SVOC)**	WW-98285-9	IS-200219-RLF	See Attached Report	ug/L	-	-	-	EPA 625.1
Pesticides/PCBs***	WW-98285-10	IS-200219-RLF	See Attached Report	ug/L	-	-	-	EPA 608.3
Phenols*	WW-98285-11	IS-200219-RLF	ND	mg/L	0.015*	02/24/20	-	EPA 420.4
Oil & Grease**	WW-98285-12	IS-200219-RLF	ND	mg/L	4.0**	02/26/20	-	EPA 1664B
Total Petroleum Hydrocarbons (TPH)*	WW-98285-12	IS-200219-RLF	ND	mg/L	4.0**	02/26/20	-	EPA 1664B
Volatile Organic Compounds (VOC)***	WW-98285-13	IS-200219-RLF	See Attached Report	ug/L	-	-	-	EPA 624.1

*Analysis was performed by Phoenix Environmental Laboratories Inc., 587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040.
NY Lab Registration #11301
*RL/PQL = Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation)
*ND = Not Detected, BRL = Below Reporting Limit

**Analysis was performed by ALS Environmental, 301 Fulling Mill Road, Middletown, PA 17057, NY Lab Certification No. NY 11759
**RDL - Reporting Detection Limit
**ND - Not Detected - indicates that the analyte was Not Detected at the RDL.
**1 = The QC sample type LCS for method 335/4500/9012B was outside the control limits for analyte Cyanide Amenable. The % Recovery was reported as 42.4 and the control limits were 90 to 110.

37 Ramland Road, Orangeburg, New York 10962
Tel: 800-259-9532, 201-484-7461 Fax: 845-818-3593 E-mail: aat@aatec.com

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Technologies Inc.

ACCREDITED IN ACCORDANCE WITH

ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

***Analysis was performed by Pace Analytical, 575 Broad Hollow Road, Melville, NY 11747. NY Certification #10478

Reviewed and approved by:

Slava Kogan, Designee for
George Stancu
Technical Director

37 Ramland Road, Orangeburg, New York 10962
Tel: 800-259-9532, 201-484-7461 Fax: 845-818-3593 E-mail: aat@aatec.com

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ANALYTICAL REPORT
NYS DOH LABORATORY ID NO: 11713

Table 1: METALS*

Parameter	Lab Sample ID	Client Sample ID	Result	Unit	RDL	Date of Analysis	Analyst	Method
Antimony (Sb)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.020	02/25/20	-	EPA 200.7
Arsenic (As)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.010	02/25/20	-	EPA 200.7
Beryllium (Be)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.0040	02/25/20	-	EPA 200.7
Boron (B)	WW-98285-1	IS-200219-RLF	0.22	mg/l	0.10	02/25/20	-	EPA 200.7
Cadmium (Cd)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.0020	02/25/20	-	EPA 200.7
Chromium (Cr)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.0050	02/25/20	-	EPA 200.7
Copper (Cu)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.010	02/25/20	-	EPA 200.7
Lead (Pb)	WW-98285-1	IS-200219-RLF	0.0082	mg/l	0.0060	02/25/20	-	EPA 200.7
Manganese (Mn)	WW-98285-1	IS-200219-RLF	0.27	mg/l	0.0050	02/25/20	-	EPA 200.7
Mercury (Hg)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.00020	02/22/20	-	EPA 245.1
Molybdenum (Mo)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.020	02/25/20	-	EPA 200.7
Nickel (Ni)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.020	02/25/20	-	EPA 200.7
Selenium (Se)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.020	02/25/20	-	EPA 200.7
Silver (Ag)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.0040	02/25/20	-	EPA 200.7
Thallium (Tl)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.020	02/25/20	-	EPA 200.7
Zinc (Zn)	WW-98285-1	IS-200219-RLF	ND	mg/l	0.020	02/25/20	-	EPA 200.7

*Analyses were performed by ALS Environmental, 301 Fulling Mill Road, Middletown, PA 17057, NY Lab Certification No. NY 11759
*RDL - Reporting Detection Limit
*ND - Not Detected - indicates that the analyte was Not Detected at the RDL
*Sample was prepared by EPA 200.7 on 02/23/20 and for EPA 245.1 on 02/22/20

Reviewed and approved by:

Slava Kogan, Designee for
George Stancu
Technical Director

37 Ramland Road, Orangeburg, New York 10962
Tel: 800-259-9532, 201-484-7461 Fax: 845-818-3593 E-mail: aat@aatec.com

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

February 26, 2020

FOR: Attn: Slava Kogan
Advanced Analytical Technologies, Inc.
37 Ramland Road
Orangeburg, NY 10962

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		02/19/20	8:36
Location Code:	ADV-ANA	Received by:	B	02/20/20	16:16
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:					

Laboratory Data

SDG ID: GCF35484
Phoenix ID: CF35484

Project ID:
Client ID: WW-98285-11

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Phenolics	< 0.015	0.015	mg/L	1	02/24/20 07:52	MSF	E420.4

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level L=Biased Low

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
February 26, 2020
Reviewed and Released by: Kathleen Cressia, QA/QC Officer

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3087807 WW SV,CN,OG

Lab ID: **3087807003** Date Collected: 2/19/2020 08:36 Matrix: Water

Sample ID: **WW-98285-9** Date Received: 2/20/2020 19:45

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
SEMIVOLATILES										
Acenaphthene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Acenaphthylene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Anthracene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Benzidine	ND		ug/L	4.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Benzo(a)anthracene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Benzo(a)pyrene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Benzo(b)fluoranthene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Benzo(g,h,i)perylene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Benzo(k)fluoranthene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
4-Bromophenyl-phenylether	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Butylbenzylphthalate	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
4-Chloro-3-methylphenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
bis(2-Chloroethoxy)methane	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
bis(2-Chloroethyl)ether	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
bis(2-Chloroisopropyl)ether	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2-Chloronaphthalene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2-Chlorophenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
4-Chlorophenyl-phenylether	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Chrysene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Di-n-Butylphthalate	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Di-n-Octylphthalate	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Dibenzo(a,h)anthracene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
3,3-Dichlorobenzidine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,4-Dichlorophenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Diethylphthalate	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,4-Dimethylphenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Dimethylphthalate	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,4-Dinitrophenol	ND		ug/L	6.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,4-Dinitrotoluene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,6-Dinitrotoluene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
1,2-Diphenylhydrazine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
bis(2-Ethylhexyl)phthalate	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Fluoranthene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Fluorene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Hexachlorobenzene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Hexachlorobutadiene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Hexachlorocyclopentadiene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A

ALS Environmental

301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

ANALYTICAL RESULTS

Workorder: 3087807 WW SV,CN,OG

Lab ID: **3087807003** Date Collected: 2/19/2020 08:36 Matrix: Water

Sample ID: **WW-98285-9** Date Received: 2/20/2020 19:45

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Hexachloroethane	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Indeno(1,2,3-cd)pyrene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Isophorone	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2-Methyl-4,6-dinitrophenol	ND		ug/L	6.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Naphthalene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Nitrobenzene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2-Nitrophenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
4-Nitrophenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
N-Nitrosodi-n-butylamine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
N-Nitrosodiethylamine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
N-Nitrosodimethylamine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
N-Nitroso-di-n-propylamine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
N-Nitrosodiphenylamine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
N-Nitrosopyrrolidine	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Pentachlorobenzene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Pentachlorophenol	ND		ug/L	6.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Phenanthrene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Phenol	ND		ug/L	8.2	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Pyrene	ND		ug/L	1.5	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
1,2,4,5-Tetrachlorobenzene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
1,2,4-Trichlorobenzene	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,4,5-Trichlorophenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2,4,6-Trichlorophenol	ND		ug/L	3.1	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	56		%	47 - 128	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2-Fluorobiphenyl (S)	56.2		%	52 - 118	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
2-Fluorophenol (S)	46		%	20 - 87	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Nitrobenzene-d5 (S)	71.9		%	27 - 139	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Phenol-d5 (S)	33.6		%	10 - 81	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A
Terphenyl-d14 (S)	80.1		%	46 - 133	EPA 625.1	2/26/20 11:45	MXL	2/27/20 14:58	CGS	A

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 524/624/608 2/20
Pace Project No.: 70122697

Sample: WW-98285-13 **Lab ID: 70122697006** Collected: 02/19/20 08:36 Received: 02/21/20 18:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
624.1 Volatile Organics	Analytical Method: EPA 624.1							
Benzene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	71-43-2	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	74-83-9	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		02/22/20 16:51	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-00-3	
2-Chloroethylvinyl ether	**<1.0**	ug/L	1.0	1		02/22/20 16:51	110-75-8	
Chloroform	**<1.0**	ug/L	1.0	1		02/22/20 16:51	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	74-87-3	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	124-48-1	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	95-50-1	
1,3-Dichlorobenzene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	541-73-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	106-46-7	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-71-8	CL,L2
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	10061-01-5	
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	100-41-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-09-2	
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	127-18-4	L2
Toluene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		02/22/20 16:51	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-69-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		02/22/20 16:51	75-01-4	
Xylene (Total)	**<1.0**	ug/L	1.0	1		02/22/20 16:51	1330-20-7	
Surrogates								
4-Bromofluorobenzene (S)	102	%	79-124	1		02/22/20 16:51	460-00-4	
Toluene-d8 (S)	102	%	69-127	1		02/22/20 16:51	2037-26-5	
1,2-Dichloroethane-d4 (S)	106	%	68-153	1		02/22/20 16:51	17060-07-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 524/624/608 2/20
Pace Project No.: 70122697

Sample: WW-98285-10 **Lab ID: 70122697007** Collected: 02/19/20 08:36 Received: 02/21/20 18:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
608.3 GCSV PCB	Analytical Method: EPA 608.3 Preparation Method: EPA 608.3							
PCB-1016 (Aroclor 1016)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	12674-11-2	
PCB-1221 (Aroclor 1221)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	11104-28-2	
PCB-1232 (Aroclor 1232)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	11141-16-5	
PCB-1242 (Aroclor 1242)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	53469-21-9	
PCB-1248 (Aroclor 1248)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	12672-29-6	
PCB-1254 (Aroclor 1254)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	11097-69-1	
PCB-1260 (Aroclor 1260)	**<1.0**	ug/L	1.0	1	02/24/20 14:56	02/25/20 18:13	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	71	%	30-150	1	02/24/20 14:56	02/25/20 18:13	877-09-8	
Decachlorobiphenyl (S)	76	%	30-150	1	02/24/20 14:56	02/25/20 18:13	2051-24-3	
608.3 GCSV Pesticides	Analytical Method: EPA 608.3 Preparation Method: EPA 608.3							
Aldrin	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	309-00-2	
alpha-BHC	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	319-84-6	
beta-BHC	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	319-85-7	
delta-BHC	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	319-86-8	
gamma-BHC (Lindane)	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	58-89-9	
Chlordane (Technical)	**<1.0**	ug/L	1.0	1	02/24/20 14:57	02/26/20 20:59	57-74-9	
4,4'-DDD	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	72-54-8	
4,4'-DDE	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	72-55-9	
4,4'-DDT	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	50-29-3	
Dieldrin	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	60-57-1	
Endosulfan I	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	959-98-8	
Endosulfan II	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	33213-65-9	
Endosulfan sulfate	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	1031-07-8	
Endrin	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	72-20-8	
Endrin aldehyde	**<0.10**	ug/L	0.10	1	02/24/20 14:57	02/26/20 20:59	7421-93-4	
Heptachlor	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	76-44-8	
Heptachlor epoxide	**<0.050**	ug/L	0.050	1	02/24/20 14:57	02/26/20 20:59	1024-57-3	
Methoxychlor	**<0.50**	ug/L	0.50	1	02/24/20 14:57	02/26/20 20:59	72-43-5	
Toxaphene	**<5.0**	ug/L	5.0	1	02/24/20 14:57	02/26/20 20:59	8001-35-2	
Surrogates								
Tetrachloro-m-xylene (S)	66	%	30-150	1	02/24/20 14:57	02/26/20 20:59	877-09-8	
Decachlorobiphenyl (S)	62	%	30-150	1	02/24/20 14:57	02/26/20 20:59	2051-24-3	

REPORT OF LABORATORY ANALYSIS

AAT
Advanced Analytical Technologies Inc.

ACCREDITED IN ACCORDANCE WITH

CERTIFICATION

Client Name: Rockland County Sewer District #1	Date of Report:	03/16/20
4 Route 340	AAT Project Number:	037018
Orangeburg, NY 10962	Client Project Name:	RC200219
	Sampled by:	Rockland County Sewer District #1
	Matrix:	Non-Potable Water
	Date/Time Received:	02/19/20 15:22

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the systems, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Slava Kogan, Designee for
George Stancu
Technical Director

37 Ramland Road, Orangeburg, New York 10962
Tel: 800-259-9532, 201-484-7461 Fax: 845-818-3593 E-mail: aat@aatec.com

AAT
Advanced Analytical Technologies Inc.

37 Ramland Road
Orangeburg, NY 10962
Tel: 201-484-7461
Fax: 845-818-3593

NELAP CERTIFIED, NY LAB ID: 11713, NJDEP LAB ID: NY100

CHAIN OF CUSTODY

PAGE 1 OF 1

Company Name: Rockland County Sewer District #1
Address: 4 Route 340 Orangeburg NY 10962
Contact Name: Linda Hoffman
Tel/Fax: 845-365-6626
Sampler's Name/Affiliation: (Print)
Sampler's Signature:

Client Project Name: RC200219
Client Project Number: RC200219
Client Purchase Order No:
Project Mgr. Name:
Send Invoice to:
AAT Project No: J37018

FOR LABORATORY USE ONLY

QTY	PRESERVATION	pH CHECK
2+4+1	Unpreserved	6.81, 6.81, 6.81, 6.81
	Ascorbic/HCl Vials	6.90, 6.90 6.81
2	HCl Vials	
	HCl	
1	HNO_3	<2
4	H_2SO_4	<2 #1
1	NaOH	>12
	NaOH/Zn Acetate	
	$Na_2S_2O_3$	

SAMPLE LOCATION / FIELD ID	LAB SAMPLE ID	COLLECTION DATE	TIME Start	TIME End	SAMPLE TYPE comp	SAMPLE TYPE grab	NUMBER OF PRESERVED CONTAINERS MATRIX	TOTAL	NONE	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	NaOH/Zn Ac	OTHER	ANALYSIS REQUESTED
IS-200219-RLF	WW 98285 (1-13)	2/19/2020	11:10A	8:36A	X		WW	16		1							metals (6) B, Sb, As, Be, Ca, Cr, Fe, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, TL
					X				2								Chlorides, TDS
					X							3					Ammonia, TKN, total phosphorous
						X							1				Total + Free Cyanide
						X			5								Formaldehyde, Semi volatiles
																	PCB's, Pesticides
						Y						2					Phenols, O&G, Greese, TPH
						X					2						VOCs

MATRIX CODES: DW: DRINKING WATER, GW: GROUND WATER, WW: NON POTABLE WATER, SW: SOIL, SL: SLUDGE, SOL: NON SOIL SOLID, O: OTHER

SPECIAL INSTRUCTIONS:

TURNAROUND TIME: [X] STANDARD 2 WEEKS [ ] RUSH. LABORATORY APPROVAL REQUIRED

REPORT FORMAT: [X] RESULTS ONLY [ ] NJ REDUCED [ ] ELECTRONIC DATA DELIVERABLES

RELINQUISHED BY (Print)	DATE/TIME	RECEIVED BY (Print)	DATE/TIME
Linda Hoffman	2/19/2020 2:52 PM		
Signature:		Signature:	
RELINQUISHED BY (Print):	DATE: 2/19/20	RECEIVED BY (Print): S. Coyne	DATE:
Signature:	TIME: 3:22 PM	Signature:	TIME:
RELINQUISHED BY (Print):	DATE:	RECEIVED BY (Print):	DATE:
Signature:	TIME:	Signature:	TIME:

FIELD ANALYSIS
SAMPLE TEMP:
SAMPLE pH:
RES. Cl: Yes No
Cooler Temp. upon receipt at lab 4C
Rec'd on Ice? Yes No

White - Original Yellow - Laboratory Copy Pink - Client Copy