

STERLING
Sterling Environmental Engineering, P.C.

March 29, 2022

Mr. Payson Long
Division of Environmental Remediation, Remedial Bureau E, Section D
NYS Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, New York 12233-7020

Via Email (payson.long@dec.ny.gov)

Subject: 2022 Annual Post-Closure Monitoring Event
Town of Ramapo Landfill
STERLING File #20010 (Task 200)

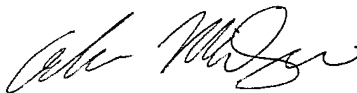
Dear Mr. Long,

In accordance with the approved Site Management Plan, enclosed please find the Post-Closure Monitoring report documenting the monitoring event conducted January 18 to January 20, 2022. The prior monitoring event was conducted in October 2020. Therefore, this PCM event covers the monitoring period of November 1, 2020 through January 31, 2022.

The next Periodic Review Report is due by June 14, 2023 in accordance with the NYSDEC letter dated February 28, 2022 (copy enclosed). The PRR will be submitted after the 2nd quarter 2023 PCM event.

Please contact me should you have any questions or comments.

Very truly yours,
STERLING ENVIRONMENTAL ENGINEERING, P.C.



Andrew M. Millspaugh, P.E.
Vice President
andrew.millspaugh@sterlingenvironmental.com

AMM/bc
Email
Enclosures

cc: Michael Sadowski, P.E., Town of Ramapo
Paul Gdanski, P.E., Town of Ramapo
George Jacob, USEPA
Anthony Perretta, NYSDOH
Arlene Lapidus, Ramapo Land Co., Inc.
William Prehoda, Suez NA
Jon France, Torne Brook Farm *
Levy and Stacey Lehrmann, 20 Torne Brook Road *
* Report text and Table 5 only

S:\Sterling\Projects\2000 Projects\Town of Ramapo - 20010\Correspondence\2022\2022-03-29_PCM Report Submission_ltr.docx

"Serving our clients and the environment since 1993"

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation

625 Broadway, 11th Floor, Albany, NY 12233-7020

P: (518)402-9543 | F: (518)402-9547

www.dec.ny.gov

2/28/2022

Mike Sadowski
Director Of Public Works
Town of Ramapo, Department of Public Works
16 Pioneer Avenue
P.O. Box 446
Tallman, NY 10982
sadowskim@ramapo-ny.gov

Re: Reminder Notice: Site Management Periodic Review Report and IC/EC Certification Submittal

Site Name: Ramapo Town Landfill

Site No.: 344004

Site Address: Torne Valley Road
Ramapo, NY 10901

Dear Mike Sadowski:

This letter serves as a reminder that sites in active Site Management (SM) require the submittal of a periodic progress report. This report, referred to as the Periodic Review Report (PRR), must document the implementation of, and compliance with, site-specific SM requirements. Section 6.3(b) of DER-10 *Technical Guidance for Site Investigation and Remediation* (available online at <http://www.dec.ny.gov/regulations/67386.html>) provides guidance regarding the information that must be included in the PRR. Further, if the site is comprised of multiple parcels, then you as the Certifying Party must arrange to submit one PRR for all parcels that comprise the site. The PRR must be received by the Department no later than **June 14, 2023**. Guidance on the content of a PRR is enclosed.

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

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

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



All site-related documents and data, including the PRR, must be submitted in electronic format to the Department of Environmental Conservation. The required format for documents is an Adobe PDF file with optical character recognition and no password protection. Data must be submitted as an electronic data deliverable (EDD) according to the instructions on the following webpage:

<https://www.dec.ny.gov/chemical/62440.html>

Documents may be submitted to the project manager either through electronic mail or by using the Department's file transfer service at the following webpage:

<https://fts.dec.state.ny.us/fts/>

The Department will not approve the PRR unless all documents and data generated in support of the PRR have been submitted using the required formats and protocols.

You may contact Payson Long, the Project Manager, at 518-402-9651 or payson.long@dec.ny.gov with any questions or concerns about the site. Please notify the project manager before conducting inspections or field work. You may also write to the project manager at the following address:

New York State Department of Environmental Conservation
Division of Environmental Remediation, BURE
625 Broadway

Albany, NY 12233-7017

Enclosures

PRR General Guidance
Certification Form Instructions
Certification Forms

ec: w/ enclosures

ec: w/ enclosures

Payson Long, Project Manager

Jeffrey Dyber, Section Chief

Dan Bendell, Hazardous Waste Remediation Supervisor, Region 3

Sterling Environmental - Mark A. Williams, P.G. - mark.williams@sterlingenvironmental.com

The following parcel owner did not receive an ec:

Rockland County Sewer District No. 1 - Parcel Owner

Rockland County Solid Waste Mgmt Auth - Parcel Owner

Rockland County Solid Waste Mgmt Auth. - Parcel Owner

Town Of Ramapo - Parcel Owner

Enclosure 1

Certification Instructions

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

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

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

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

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

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

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

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

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

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



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site Details

Box 1

Site No. **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: May 15, 2020 to May 15, 2023

YES NO

1. Is the information above correct? ☐ ☐

If NO, include handwritten above or on a separate sheet.

2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period? ☐ ☐

3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))? ☐ ☐

4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period? ☐ ☐

If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.

5. Is the site currently undergoing development? ☐ ☐

Box 2

YES NO

6. Is the current site use consistent with the use(s) listed below? ☐ ☐
Commercial and Industrial

7. Are all ICs in place and functioning as designed? ☐ ☐

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

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

Signature of Owner, Remedial Party or Designated Representative

Date

Description of Institutional ControlsParcelOwnerInstitutional Control**39.19-1-3**

Town of Ramapo

Soil Management Plan

Landuse Restriction
 Monitoring Plan
 Ground Water Use Restriction
 Site Management Plan
 O&M 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.

Site Management Plan
 Ground Water Use Restriction

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.

Description of Engineering ControlsParcelEngineering 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

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 Engineering Control 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 complete.

YES NO

☐☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

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

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

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

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

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

YES NO

☐☐

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

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

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. 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 _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

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

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

Date

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 _____ at _____,
print name print business address

am certifying as a Professional Engineer for the _____
(Owner or Remedial Party)

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

Stamp
(Required for PE)

Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

- I. Executive Summary: (1/2-page or less)
 - A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
 - B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
 - 1. progress made during the reporting period toward meeting the remedial objectives for the site
 - 2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
 - C. Compliance
 - 1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
 - 2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
 - D. Recommendations
 - 1. recommend whether any changes to the SMP are needed
 - 2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
 - 3. recommend whether the requirements for discontinuing site management have been met.
- II. Site Overview (one page or less)
 - A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
 - B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.
- III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.
- IV. IC/EC Plan Compliance Report (if applicable)
 - A. IC/EC Requirements and Compliance
 - 1. Describe each control, its objective, and how performance of the control is evaluated.
 - 2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
 - 3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
 - 4. Conclusions and recommendations for changes.
 - B. IC/EC Certification
 - 1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).
- V. Monitoring Plan Compliance Report (if applicable)
 - A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
 - B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
 - C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
 - D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
 - E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.
- VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
 - A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
 - B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
 - C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

- D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.
- E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

- A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;
 - 1. whether all requirements of each plan were met during the reporting period
 - 2. any requirements not met
 - 3. proposed plans and a schedule for coming into full compliance.
- B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.
- C. Future PRR Submittals
 - 1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
 - 2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

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



POST-CLOSURE MONITORING REPORT

**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
237 Route 59
Suffern, New York 10901

and

Town of Ramapo Department of Public Works
16 Pioneer Avenue
P.O. Box 446
Tallman, New York 10982-0446

Prepared by:

Sterling Environmental Engineering, P.C.
24 Wade Road
Latham, New York 12110

March 29, 2022

"Serving our clients and the environment since 1993"

POST-CLOSURE MONITORING REPORT

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

NYSDEC SITE NUMBER #344004; USEPA CERCLIS ID NYD000511493

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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.

Post Closure Monitoring (PCM) is required annually (every 5th quarter) to document site management activities outlined in the SMP. This PCM Report documents the monitoring event conducted January 18 to January 20, 2022. The prior monitoring event was conducted in October 2020. Therefore, this PCM event covers the monitoring period of November 1, 2020 through January 31, 2022.

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 the current PCM event, 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 easternmost 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.

Post Closure Monitoring (PCM) is required annually (every 5th quarter) to document site management activities outlined in the Site Management Plan (SMP). This PCM Report documents the monitoring event conducted January 18 to January 20, 2022. The prior monitoring event was conducted in October 2020. Therefore, this PCM event covers the monitoring period of November 1, 2020 through January 31, 2022. 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 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 the current PCM event, 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.

2.0 OVERVIEW

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

- A Landfill inspection was performed by Sterling Environmental Engineering, P.C. (STERLING) on January 20, 2022. Site Location and Property Features Maps are provided as Figures 1 and 2. The 2022 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 is provided in Appendix A. An NYSDEC Region 3/Solid Waste Program Annual Post

Closure Monitoring & Maintenance Report for Landfills is provided as Appendix B. A photograph log documenting observations during the Annual Landfill inspection is provided in Appendix C.

- The 2022 air quality monitoring event was conducted January 18 to January 20, 2022. 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, private water supply wells PW-1 and PW-2, and public water supply wells SVWC-93, SVWC-94, SVWC-95, and SVWC-96. A groundwater sample was not collected from monitoring well UP-R due to frozen water in the upper portion of the well riser restricting sampling equipment from being inserted into the well. 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 and UP-I), 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 during 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 2022 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 (H₂S), 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, H₂S, and VOC measurements were obtained with a QRAE multi-gas monitor equipped with a photoionization detector (PID). The presence of VOCs, H₂S, and explosive gas were not detected at any of the sampling locations

(Table 1). The air quality monitoring survey for explosive gas, H₂S, 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. Groundwater gradients are similar in both aquifer systems and downward vertical gradients are noted throughout the Landfill perimeter in well clusters 2, 3, 5, 6 and well pairs 4-OS/4-I, 4-OS/4-R, 7-OS/7-I, 7-OS/7-R, 8-OS/8-I, 9-OS/9-R, 9-I/9-R and UP-OS/UP-I. All other monitoring well clusters and pairs display a slight to moderately upward vertical gradient. 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 January 2022 groundwater analytical results are provided on Tables 4 and 5. A duplicate sample was collected from bedrock monitoring well 9-I and is labeled as “DUP01182022”.

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 (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, 8-OS, and 10-OS), two (2) intermediate overburden monitoring wells (3-OS/I and 8-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	8-OS	8-I	8-R	9-R	10-OS
Chromium	0.05	0.5443	--	0.1541	0.9992	0.3624	--	--	--	--
Iron	0.3**	0.45	0.849	1.21	6.58	2.19	7.52	2.46	0.569	1.96
Magnesium	35							41.7	--	--
Manganese	0.3**	2.215	0.05451	0.1074	0.07359	0.2268	3.129	4.152	2.019	0.05222
Nickel	0.1	--	--	0.1223	--	--	--	--	--	--
Sodium	20	90.6	32	26.8	80.5	24.6	44.7	37.8	48.4	--

All units are in mg/L

-- = parameter did not exceed applicable standard

** = 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:

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, 3-OS/I, 4-OS, and 8-OS.

Monitoring wells 1-OS, 3-OS/I, 4-OS, and 8-OS show data trendlines that are generally consistent with a slight apparent increasing trend.

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, 8-OS, 8-I, 8-R, 9-R, and 10-OS.

Monitoring wells 3-OS/I and 9-R show stable conditions over time. The following monitoring wells show a decreasing trend over time: 1-OS, 2-OS, 4-OS, 8-OS, 8-I, and 8-R. This is the first exceedance for iron at monitoring well 10-OS.

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, 8-I, 8-R, and 9-R. Monitoring well 8-R shows a decreasing trend over time, although the data from January 2022 is slightly elevated. Manganese in groundwater at monitoring well 8-I displays a slight increasing trend. Monitoring well 9-R is generally stable with a recent decreasing trend.

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 generally stable conditions.

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, and 9-R. The following monitoring wells show an increasing trend over time: 1-OS, 2-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).

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 eight (8) monitoring wells UP-OS, UP-I, 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 1.0 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, 9-OS, 9-I, 10-OS, 10-I, and 10-R. 1,4-Dioxane was detected below the MCL at public water supply wells SVWC-94 and SVWC-95 (Table 5), and above the NYSDEC screening level in the groundwater sampled from monitoring well 9-R (Tables 4).

Per and Polyfluoroalkyl Substances (PFAS)

Groundwater samples were collected for PFAS compound analysis from eight (8) monitoring wells UP-OS, UP-I, 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). 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. PFOA was detected at levels exceeding the NYSDEC Screening Level in groundwater sampled from monitoring wells 9-I and 9-R at concentrations of 11.8 ng/L and 11.3 ng/L, respectively. 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 October 7, 2020, April 14, 2021, July 21, 2021, and October 20, 2021 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, nickel and zinc. Inorganic parameters that were not detected include antimony, arsenic, beryllium, chromium, lead, mercury, molybdenum, 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 PCM event.

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 January 20, 2022 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 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 (Figure 7 and Photographs 1, 3, 7, 8, 11, 13, 16, 19, and 21, 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.

One (1) damaged gas vent and two (2) angled gas vents (Figure 7 and Photographs 4, 5, and 6, 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.

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.

Annual leachate/groundwater volumes pumped from the Landfill to the Western Ramapo Sewage Treatment Plant between 1995 and 2021 are summarized in Table 20. The total leachate/groundwater removed from the Landfill during this reporting period is approximately 15,894,762 gallons: 2,528,080 gallons November 1, 2020 through December 31, 2020 and 13,366,682 gallons throughout the entire year of 2021. Removed leachate/groundwater was directed through a force main to the Western Ramapo Sewage Treatment Plant for treatment. For comparison, volume of leachate/groundwater discharged to the Western Ramapo Sewage Treatment Plant between 2011 and 2021 has averaged 13,868,192 gallons per year. Three (3) of the last five (5) years have had annual volume removals above the most recent ten (10) year average, while the 2021 extraction well discharge volume was 3.6% lower 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 Modified 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.

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 Modified 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, H₂S, 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 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 September 20, 2021 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 through September 20, 2021.

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 September 20, 2021. 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.
- Annual or more frequent clearing of drainage swales, ditches, and downchutes.

Between November 1, 2020 and January 31, 2022, 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.
- 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 minor deficiencies requiring attention as indicated in the Landfill Inspection Form in Appendix A. 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 November 1, 2020 to January 31, 2022:

- 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.
- One (1) damaged gas vent 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 and should be repaired.
- The January 18-20, 2022 air quality monitoring survey for explosive gas, H₂S, 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).
- 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 in well clusters 2, 3, 5, 6 and well pairs 4-OS/4-I, 4-OS/4-R, 7-OS/7-I, 7-OS/7-R, 8-OS/8-I, 9-OS/9-R, 9-I/9-R and UP-

OS/UP-I. All other monitoring well clusters and pairs display a slight to moderately upward vertical gradient. These vertical gradients are consistent with historical trends.

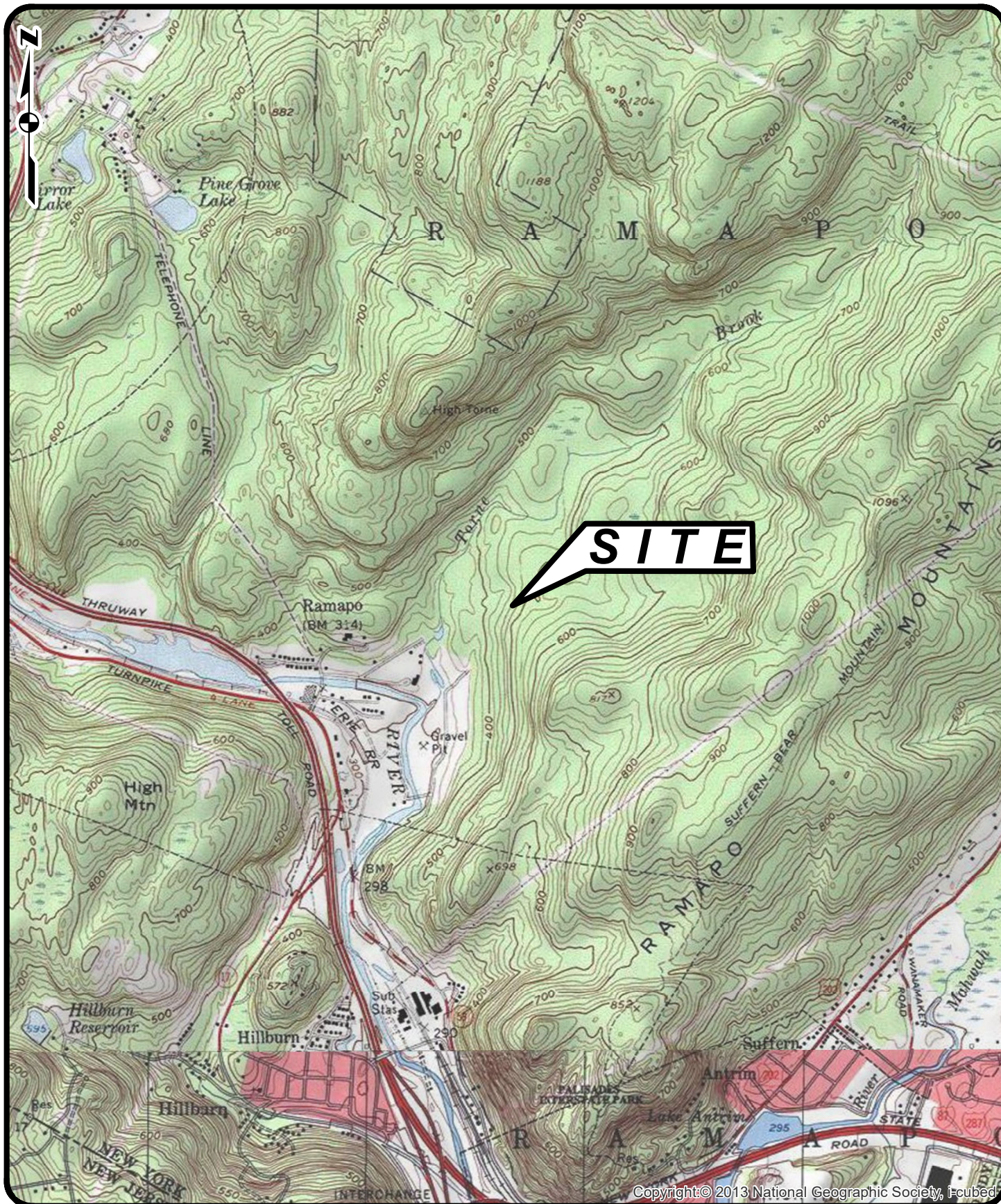
- No site-related VOCs were detected in groundwater at or above the respective laboratory MDLs.
- No exceedances of USEPA MCLs were noted at the private water supply wells or public water supply wells. The ARAR for sodium was exceeded at all sampled public water supply wells (SVWC-93, SVWC-94, SVWC-95, and SVWC-96), which is consistent with historical results.
- Applicable TOGS 1.1.1 standards were exceeded for chromium, iron, manganese, magnesium, nickel and sodium at one or more monitoring wells.
- Historical trends are relatively consistent with prior analytical results.
- The NYSDEC screening level for 1,4-Dioxane was exceeded in groundwater from monitoring well 9-R.
- The NYSDEC-PFAS screening level for PFOA was exceeded in groundwater samples collected from monitoring well 9-I and 9-R.
- The volume of leachate/groundwater pumped from Landfill extraction wells to the RCSD No. 1 Western Ramapo Treatment Plant during 2021 was 13.37 million gallons and is slightly less than 13.87 million gallons per year average from 2011 through 2021.
- 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 next groundwater monitoring event will be conducted in the second quarter of 2023.

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

- The damaged gas vents should be repaired
- Overgrown vegetation should be removed from drainage features.
- The damaged concrete collar for the manhole cover at MH E-6 should be repaired.
- Monitoring is recommended to continue in accordance with the SMP requirements.

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FIGURES



STERLING

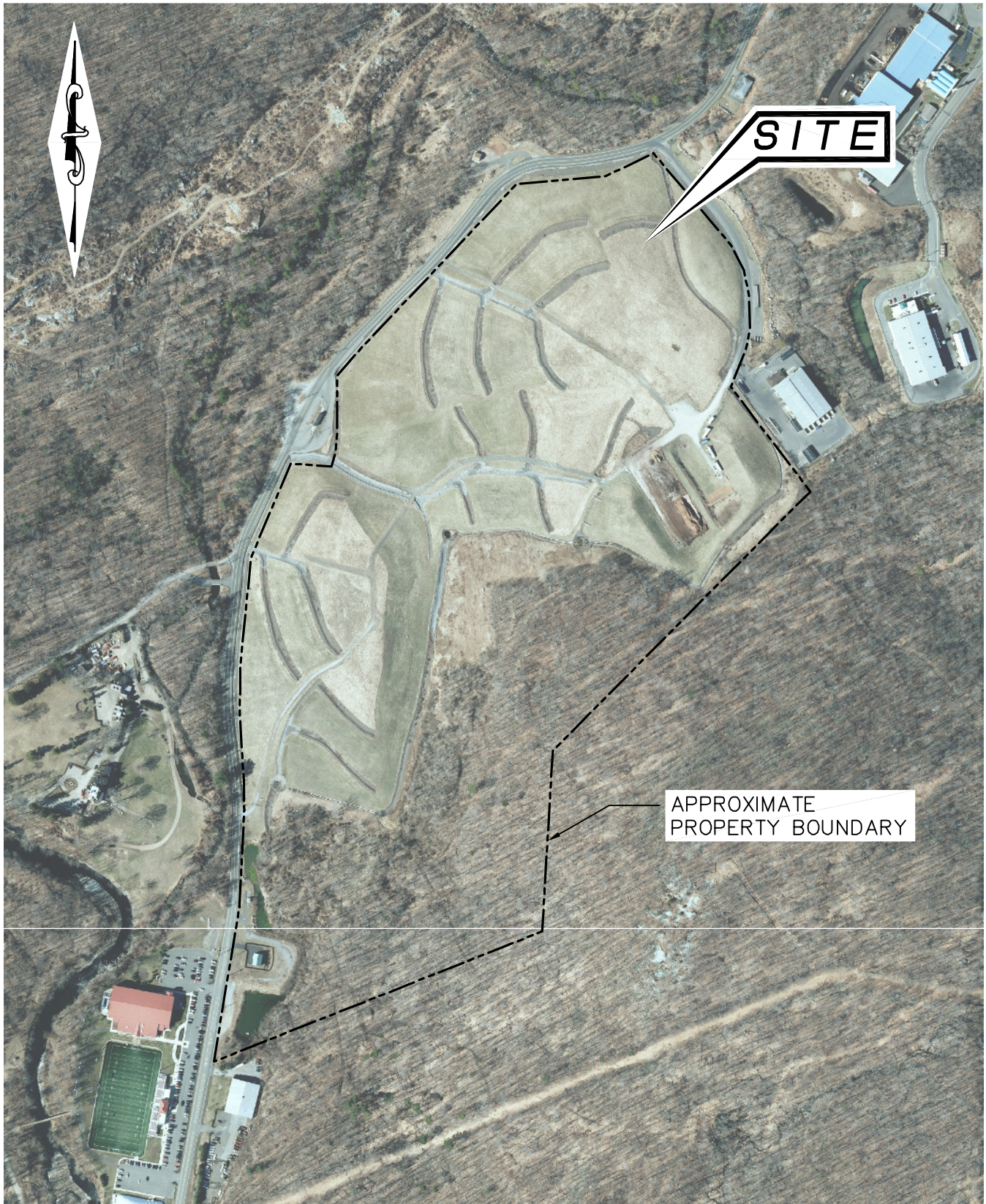
Sterling Environmental Engineering, P.C.
24 Wade Road • Latham, New York 12110

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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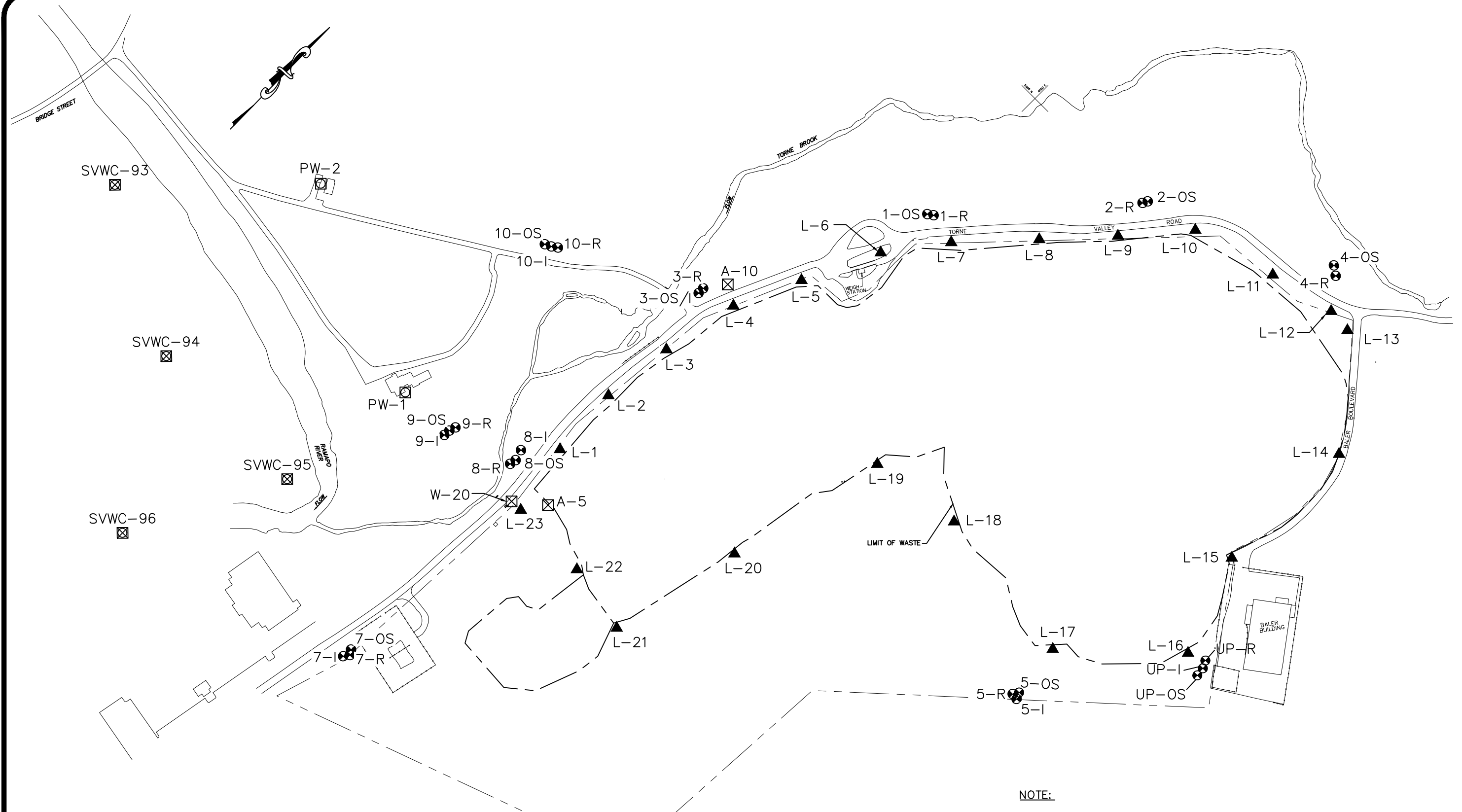
PROPERTY FEATURES
TOWN OF RAMAPO
LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

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

S:\Drawings\20010 - Town of Ramapo\20010037\ProposedMWLocations_2016-10-14.dwg/18/2019 12:47 PM



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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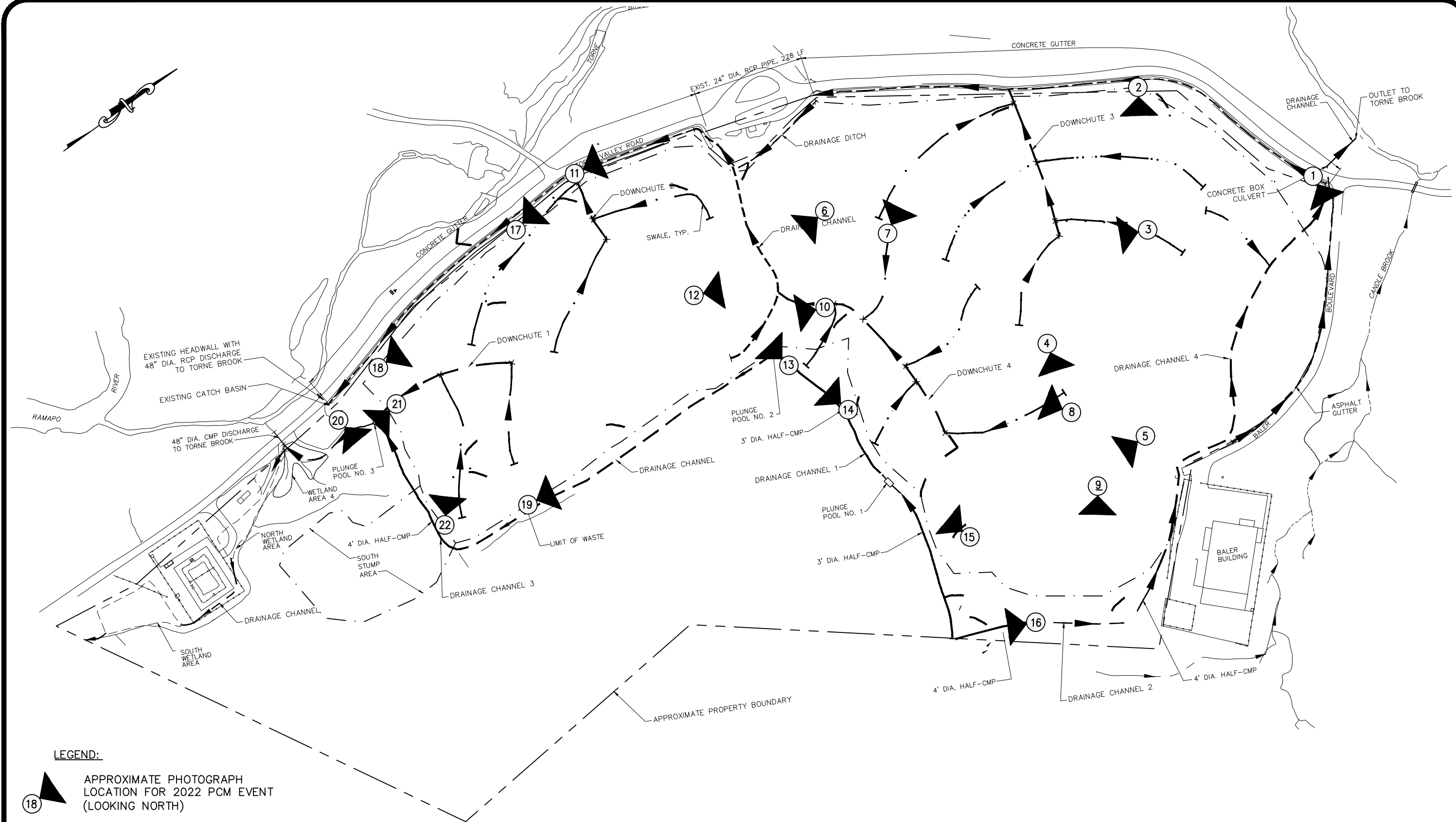
GROUNDWATER MONITORING WELLS AND
AIR QUALITY MONITORING LOCATIONS
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

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

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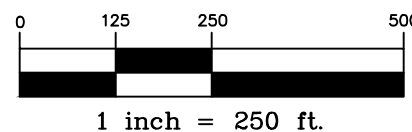


LEGEND:

- 18 APPROXIMATE PHOTOGRAPH LOCATION FOR 2022 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



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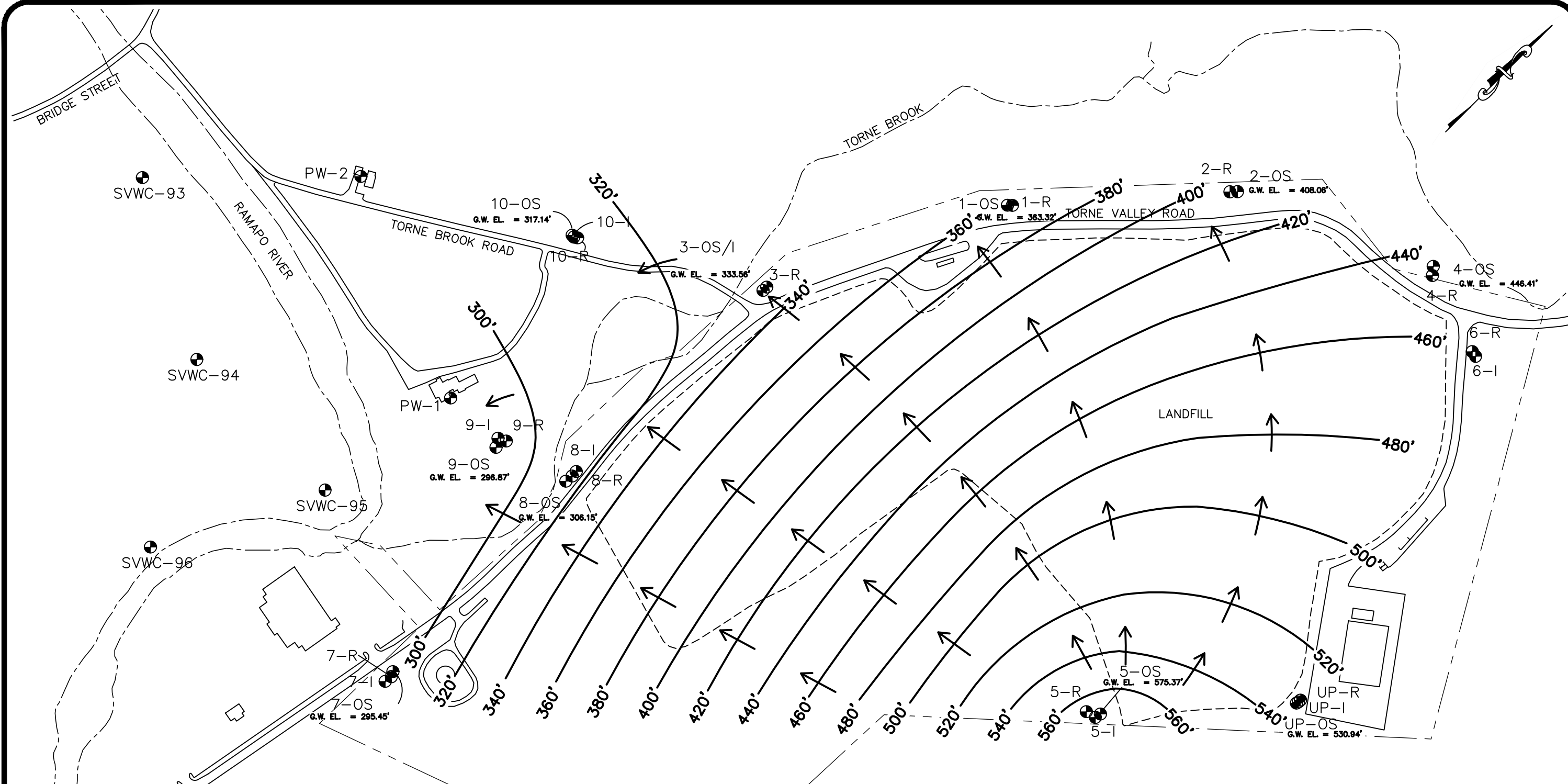
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SURFACE WATER DRAINAGE AND EROSION CONTROL FEATURES, WITH PHOTOGRAPH LOCATIONS
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 1/31/2022 | SCALE: 1" = 250' | DWG. NO. 20010056 | FIGURE 4



LEGEND:

- GROUNDWATER ELEVATION CONTOUR
- ← GROUNDWATER FLOW DIRECTION
- - - - - APPROXIMATE LANDFILL COVER SYSTEM BOUNDARY
- - - - - APPROXIMATE LANDFILL PROPERTY BOUNDARY
- 1-OS MONITORING WELL
- G.W. EL. = 363.32' GROUNDWATER ELEVATION FOR JANUARY 2022 MONITORING EVENT

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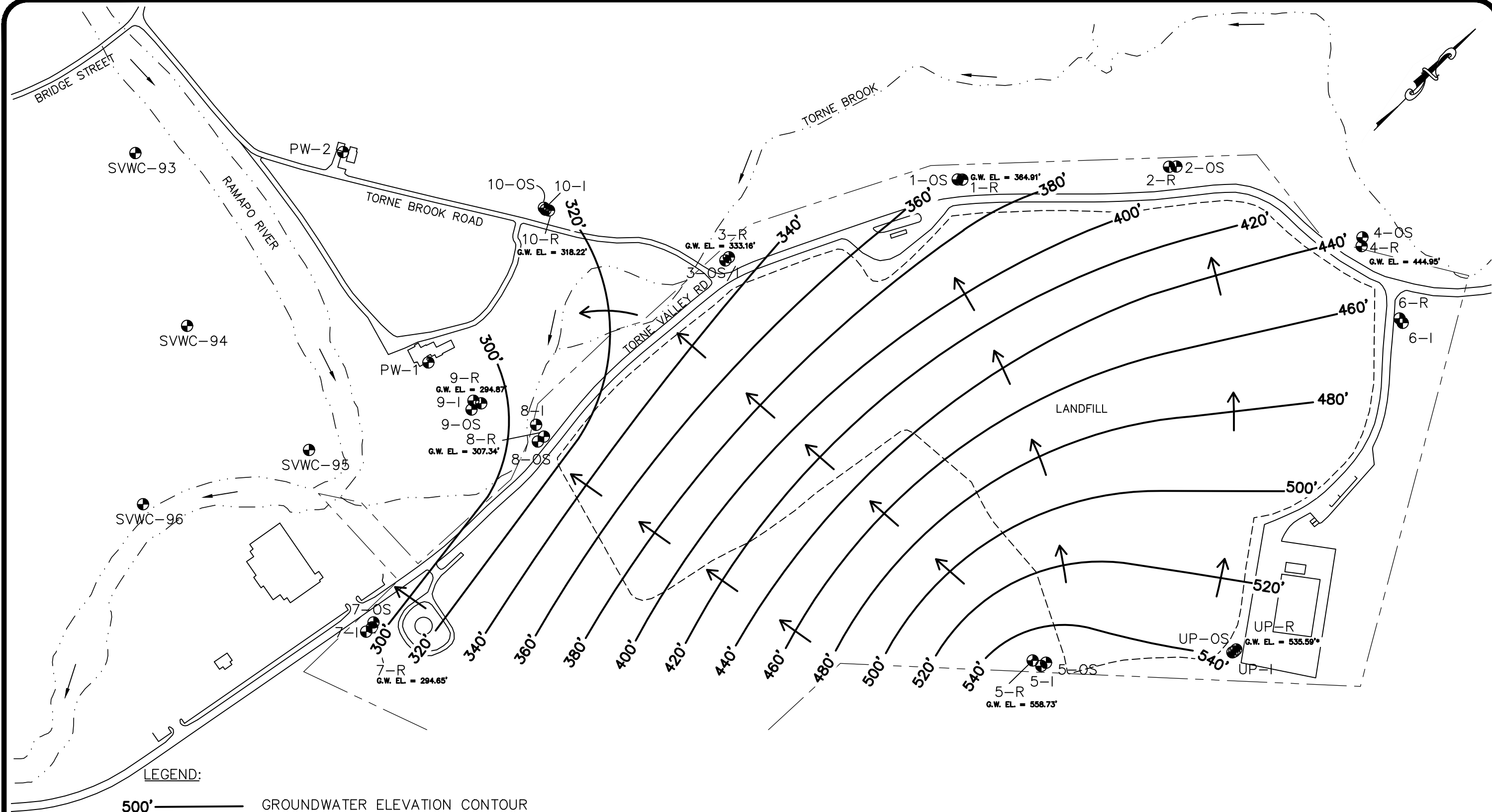
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SHALLOW OVERBURDEN AQUIFER GROUNDWATER
ELEVATION CONTOURS – JANUARY 18–20, 2022
TOWN OF RAMAPO
LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 1/27/2022 | SCALE: 1" = 300' | DWG. NO. 20010055 | FIGURE 5



LEGEND:

- 500' ——— GROUNDWATER ELEVATION CONTOUR
- ← GROUNDWATER FLOW DIRECTION
- - - - - APPROXIMATE LANDFILL COVER SYSTEM BOUNDARY
- - - - - APPROXIMATE LANDFILL PROPERTY BOUNDARY
- 1-R MONITORING WELL

G.W. EL. = 384.91'
*

GROUNDWATER ELEVATION FOR JANUARY 2022 MONITORING EVENT
BEDROCK GROUNDWATER ELEVATION FOR WELL UP-R WAS ASSUMED. WELL DISPLAYS
ARTESIAN CONDITIONS AND WATER WAS FROZEN TO TOP OF MEASURING POINT.

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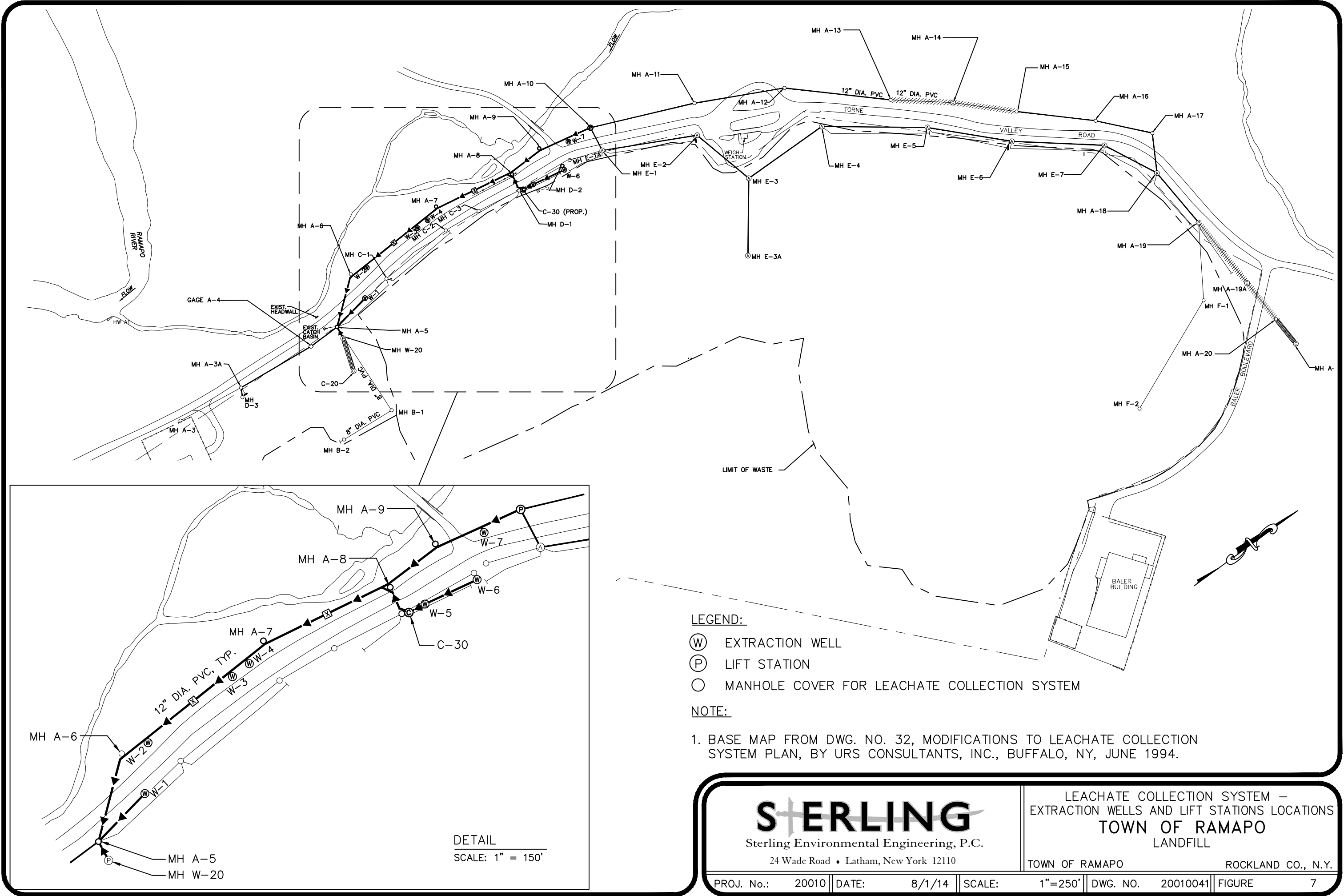
BEDROCK AQUIFER GROUNDWATER ELEVATION
CONTOURS - JANUARY 18-20, 2022
TOWN OF RAMAPO LANDFILL

TOWN OF RAMAPO

ROCKLAND CO., N.Y.

PROJ. No.: 20010 | DATE: 1/31/2022 | SCALE: 1" = 300' | DWG. NO. 20010057 | FIGURE 6

S:\Drawings\20010 - Town of Ramapo\20010041 - Leachate Collection System Plan.dwg 2/21/2017 2:21 PM



TABLES

Summary of Air Monitoring Results (1/18/2022 - 1/20/2022)
Town of Ramapo Landfill

Monitoring Location ⁽¹⁾	LEL Reading (% LEL)	H₂S 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	0.0%	0.0	0.0
Lift Station A-10	0.0%	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

H₂S = 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**

<u>Parameter</u>	<u>Document/Method No.</u>	<u>Reference</u>
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
	NYSDEC ASP (USEPA	
TAL Metals**	200.7/USEPA 200.8/USEPA	1
	245.1/USEPA 522)	
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), June 2021.
- 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 (1/18/2022- 1/20/2022)
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	1/20/2022	15.89	0.713	10.1	6.54	118.9	9.87
1-R	1/20/2022	14.68	---	---	---	---	---
1-I	1/20/2022	15.90	---	---	---	---	---
2-OS	1/19/2022	14.68	0.797	10.8	6.79	88.9	9.92
2-I	1/19/2022	16.65	---	---	---	---	---
2-R	NA	---	---	---	---	---	---
3-OS/I	1/20/2022	12.21	0.558	9.1	6.46	127.6	35.70
3-R	1/20/2022	12.35	---	---	---	---	---
4-OS	1/19/2022	6.01	0.689	8.9	5.91	118.4	42.02
4-I	1/19/2022	10.02	---	---	---	---	---
4-R	1/19/2022	7.89	---	---	---	---	---
5-OS	1/20/2022	9.50	---	---	---	---	---
5-I	1/20/2022	12.53	---	---	---	---	---
5-R	1/20/2022	26.02	---	---	---	---	---
6-I	1/20/2022	15.82	---	---	---	---	---
6-R	1/20/2022	28.70	---	---	---	---	---
7-OS	1/20/2022	13.98	0.300	10.1	6.46	144.3	1.14
7-I	1/20/2022	13.67	---	---	---	---	---
7-R	1/20/2022	14.70	---	---	---	---	---
8-OS	1/19/2022	14.06	0.318	12.5	6.30	82.5	9.10
8-I	1/19/2022	14.75	0.782	12.2	6.69	60.4	37.85
8-R	1/19/2022	13.18	1.152	10.3	6.79	110.3	2.83
9-OS	1/18/2022	11.13	0.122	12.7	6.11	95.1	1.30
9-I	1/18/2022	9.32	0.100	12.9	6.04	97.8	5.34
9-R	1/18/2022	12.48	0.591	11.9	6.66	81.8	3.64
10-OS	1/18/2022	14.88	0.043	11.1	5.13	159.6	35.69
10-I	1/18/2022	13.45	0.092	10.9	6.31	123.5	2.39
10-R	1/18/2022	12.52	0.086	9.8	6.18	136.1	0.25
UP-OS	1/19/2022	7.95	0.220	8.5	8.21	119.9	6.53
UP-I	1/19/2022	7.78	0.163	10.0	8.25	92.8	1.40
UP-R	NA	---	---	---	---	---	---
PW-1	1/19/2022	---	0.140	12.8	8.07	41.9	0.83
PW-2	1/19/2022	---	0.222	11.2	7.60	62.9	3.54
SVWC-93	1/19/2022	---	0.380	12.7	7.25	121.3	3.33
SVWC-94	1/19/2022	---	0.399	13.4	6.91	125.6	1.33
SVWC-95	1/19/2022	---	0.401	8.1	6.97	123.7	4.59
SVWC-96	1/19/2022	---	0.443	11.5	6.86	123.4	1.27

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 (1/18/2022 - 1/20/2022)
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
			1/19/2022	1/19/2022	1/19/2022	1/20/2022	1/19/2022	1/20/2022	1/19/2022	1/20/2022	1/19/2022	1/19/2022
LEACHATE INDICATOR PARAMETERS, mg/L												
Alkalinity, Total	---	---	111	74.3	NS	285	399	265	72.5	133	86.7	326
Chemical Oxygen Demand	---	---	2.7 U	2.7 U	NS	11	18	4.8 J	4.8 J	2.7 U	4.8 J	11
Hardness	---	---	106.9	75.71	NS	165	377.6	266.8	141.2 J	138.2	99.37	352.9
Total Kjeldahl Nitrogen	---	---	0.474	0.12 J	NS	0.222 J	0.576	0.216 J	0.116 J	0.193 J	0.136 J	1.42
VOLATILE ORGANIC COMPOUNDS, µg/L												
1,1-Dichloroethane	5	---	0.7 U	0.7 U	NS	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	NS	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	NS	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	NS	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	NS	ND	ND	ND	ND	ND	ND	ND
1,4 DIOXANE, µg/L												
1,4-Dioxane	---	1	0.0326 U	0.0326 U	NS	NS	NS	NS	NS	NS	NS	NS
PERFLUORINATED ALKYL ACIDS, ng/L												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	---	---	1.2 U	1.11 U	NS	NS	NS	NS	NS	NS	NS	NS
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	---	---	1.32 U	1.22 U	NS	NS	NS	NS	NS	NS	NS	NS
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	---	---	0.8 U	0.738 U	NS	NS	NS	NS	NS	NS	NS	NS
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	---	---	0.644 U	0.595 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorobutanesulfonic Acid (PFBS)	---	---	0.237 U	0.218 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorobutanoic Acid (PFBA)	---	---	0.406 U	0.374 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorodecanesulfonic Acid (PFDS)	---	---	0.974 U	0.899 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorodecanoic Acid (PFDA)	---	---	0.302 U	0.279 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorododecanoic Acid (PFDoA)	---	---	0.37 U	0.341 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluoroheptanesulfonic Acid (PFHpS)	---	---	0.684 U	0.631 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluoroheptanoic Acid (PFHpA)	---	---	0.224 U	0.207 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorohexanesulfonic Acid (PFHxS)	---	---	0.374 U	0.345 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorohexanoic Acid (PFHxA)	---	---	0.326 U	0.301 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorononanoic Acid (PFNA)	---	---	0.31 U	0.286 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorooctanesulfonamide (FOSA)	---	---	0.577 U	0.532 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorooctanesulfonic Acid (PFOS)	---	10	0.501 U	0.462 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorooctanoic Acid (PFOA)	---	10	1.41 J	0.217 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluoropentanoic Acid (PFPeA)	---	---	1.06 J	0.771 J	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorotetradecanoic Acid (PFTA)	---	---	1.05 J	0.833 J	NS	NS	NS	NS	NS	NS	NS	NS
Perfluorotridecanoic Acid (PFTTrDA)	---	---	0.325 U	0.3 U	NS	NS	NS	NS	NS	NS	NS	NS
Perfluoroundecanoic Acid (PFUnA)	---	---	0.258 U	0.239 U	NS	NS	NS	NS	NS	NS	NS	NS
PFAS, Total	---	---	3.52	1.604	NS	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), June 2021 / USEPA Health Advisory Level (HAL) for 1,4 Dioxane in drinking water (1.0 µg/L).

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

* Duplicate groundwater sample collected from bedrock monitoring well 9-I

** = 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 than 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 (1/18/2022 - 1/20/2022)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS	NYSDEC- PFAS	8-R	9-OS	9-I	DUP01182022	9-R	10-OS	10-I	10-R	EB01182022	EB01192022
			1/19/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/19/2022
LEACHATE INDICATOR PARAMETERS, mg/L												
Alkalinity, Total	---	---	495	32.7	20	20.3	155	ND	25.2	26.3	NS	NS
Chemical Oxygen Demand	---	---	18	2.7 U	7 J	2.7 U	7 J	9.2 J	2.7 U	4.8 J	NS	NS
Hardness	---	---	569.2	17.37	28.24	27.42	137.5	11.73	32.36	27.51	NS	NS
Total Kjeldahl Nitrogen	---	---	0.531	0.133 J	0.15 J	0.066 U	1.35	0.086 J	0.066 U	0.143 J	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
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
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
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
Total VOCs	---	---	ND	ND	ND	ND	ND	ND	ND	ND	NS	NS
1,4 DIOXANE, µg/L												
1,4-Dioxane	---	0.35	NS	0.0303 U	0.0303 U	0.0553 J	3.03	0.0314 U	0.0314 U	0.0314 U	NS	NS
PERFLUORINATED ALKYL ACIDS, ng/L												
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	---	---	NS	1.07 U	1.07 U	1.08 U	1.06 U	1.09 U	1.05 U	1.13 U	1.09 U	1.1 U
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	---	---	NS	1.18 U	1.17 U	1.19 U	1.16 U	1.2 U	1.16 U	1.24 U	1.2 U	1.21 U
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	---	---	NS	0.713 U	0.708 U	0.72 U	0.747 J	0.725 U	0.699 U	0.752 U	0.726 U	0.731 U
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	---	---	NS	0.574 U	0.571 U	0.58 U	0.565 U	0.584 U	0.563 U	0.606 U	0.585 U	0.589 U
Perfluorobutanesulfonic Acid (PFBS)	---	---	NS	2.66	1.95	1.91	3.52	0.214 U	0.207 U	0.222 U	0.215 U	0.216 U
Perfluorobutanoic Acid (PFBA)	---	---	NS	2.67	3.49	3.48	28.5	0.368 U	0.354 U	0.382 U	0.368 U	0.371 U
Perfluorodecanesulfonic Acid (PFDS)	---	---	NS	0.869 U	0.863 U	0.878 U	0.855 U	0.883 U	0.852 U	0.916 U	0.885 U	0.891 U
Perfluorodecanoic Acid (PFDA)	---	---	NS	0.269 U	0.268 U	0.272 U	0.269 J	0.274 U	0.264 U	0.284 U	0.274 U	0.276 U
Perfluorododecanoic Acid (PFDoA)	---	---	NS	0.33 U	0.328 U	0.333 U	0.324 U	0.335 U	0.323 U	0.348 U	0.336 U	0.338 U
Perfluoroheptanesulfonic Acid (PFHpS)	---	---	NS	0.61 U	0.606 U	0.616 U	0.6 U	0.62 U	0.598 U	0.643 U	0.621 U	0.626 U
Perfluoroheptanoic Acid (PFHpA)	---	---	NS	1.64 J	2.35	2.31	4.73	0.203 U	0.196 U	0.21 U	0.203 U	0.205 U
Perfluorohexanesulfonic Acid (PFHxS)	---	---	NS	0.397 J	0.849 J	0.788 J	2.38	0.339 U	0.327 U	0.352 U	0.339 U	0.342 U
Perfluorohexanoic Acid (PFHxA)	---	---	NS	1.93	2.22	2.07	7.39	0.296 U	0.285 U	0.307 U	0.296 U	0.298 U
Perfluorononanoic Acid (PFNA)	---	---	NS	0.56 JF	1.69 JF	1.72 JF	28.4	0.281 U	0.271 U	0.292 U	0.282 U	0.284 U
Perfluorooctanesulfonamide (FOSA)	---	---	NS	0.514 U	0.511 U	0.52 U	0.506 U	0.523 U	0.504 U	0.542 U	0.524 U	0.527 U
Perfluorooctanesulfonic Acid (PFOS)	---	10	NS	2.23	6.11	5.84	7.29	0.454 U	0.438 U	0.471 U	0.455 U	0.458 U
Perfluorooctanoic Acid (PFOA)	---	10	NS	3.23	11.8	11.8	11.3	0.213 U	0.205 U	0.221 U	0.213 U	0.214 U
Perfluoropentanoic Acid (PFPeA)	---	---	NS	2.31	1.5 J	1.49 J	6.98	0.357 U	0.344 U	0.37 U	0.357 U	0.36 U
Perfluorotetradecanoic Acid (PFTA)	---	---	NS	0.22 U	0.218 U	0.222 U	0.216 U	0.224 U	0.216 U	0.232 U	0.224 U	0.855 J
Perfluorotridecanoic Acid (PFTTrDA)	---	---	NS	0.29 U	0.288 U	0.293 U	0.285 U	0.295 U	0.284 U	0.306 U	0.295 U	0.297 U
Perfluoroundecanoic Acid (PFUnA)	---	---	NS	0.23 U	0.229 U	0.233 U	0.227 U	0.234 U	0.226 U	0.243 U	0.235 U	0.236 U
PFAS, Total	---	---	NS	17.627	31.959	31.408	101.506	ND	ND	ND	ND	0.855

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), June 2021 / USEPA Health Advisory Level (HAL) for 1,4 Dioxane in drinking water (0.35 µg/L).

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

* Duplicate groundwater sample collected from bedrock monitoring well 9-I

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

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

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TABLE 4

Summary of Groundwater Analytical Results (1/18/2022 - 1/20/2022)
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
			1/19/2022	1/19/2022	1/19/2022	1/20/2022	1/19/2022	1/20/2022	1/19/2022	1/20/2022	1/19/2022	1/19/2022
TOTAL METALS, mg/L												
Aluminum	---	---	0.113	0.0519	NS	0.15	0.292	0.0124	0.314	0.0213	0.00963 J	0.00327 U
Antimony	0.003	---	0.00042 U	0.00042 U	NS	0.00044 J	0.00067 J	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U
Arsenic	0.025	---	0.00016 U	0.00037 J	NS	0.00021 J	0.00084	0.00019 J	0.00073	0.00016 U	0.00049 J	0.00317
Barium	1	---	0.00339	0.00547	NS	0.00827	0.05683	0.01215	0.02713	0.01567	0.0095	0.025
Beryllium	0.003	---	0.0001 U	0.0001 U	NS	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Boron	1	---	0.007 J	0.004 J	NS	0.067	0.143	0.059	0.014 J	0.152	0.031	0.1
Cadmium	0.005	---	0.00005 U	0.00005 U	NS	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U
Calcium	---	---	30.2	22.2	NS	48.8	125	85.7	32.8	40.8	28.2	100
Chromium	0.05	---	0.00143	0.00428	NS	0.05443	0.03354	0.1541	0.9992	0.00441	0.3624	0.00317
Cobalt	---	---	0.00016 U	0.00018 J	NS	0.00077	0.00155	0.00093	0.00213	0.00109	0.00082	0.00752
Copper	0.2	---	0.00081 J	0.00103	NS	0.00199	0.00927	0.00142	0.00911	0.0007 J	0.00457	0.00038 U
Iron	0.3**	---	0.167	0.233	NS	0.45	0.849	1.21	6.58	0.0448 J	2.19	7.52
Lead	0.025	---	0.00034 U	0.00034 U	NS	0.00034 U	0.00095 J	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U
Magnesium	35	---	7.63	4.89	NS	10.5	15.7	12.8	14.4	8.8	7.05	24.8
Manganese	0.3**	---	0.00426	0.00371	NS	2.215	0.05451	0.1074	0.07359	0.01006	0.2268	3.129
Mercury	0.0007	---	0.0001 J	0.00009 U	NS	0.00012 J	0.00009 U	0.00009 U	0.00009 U	0.00014 J	0.00011 J	0.00014 J
Nickel	0.1	---	0.00083 J	0.0026	NS	0.03813	0.00811	0.1223	0.01962	0.00055 U	0.0139	0.00541
Potassium	---	---	0.653	0.524	NS	2.06	8.57	2.57	0.854	3.72	1.44	5.46
Selenium	0.01	---	0.00173 U	0.00173 U	NS	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U
Silver	0.05	---	0.00016 U	0.00016 U	NS	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U
Sodium	20	---	3.64	3.72	NS	90.6	32	26.8	80.5	12.7	24.6	44.7
Thallium	0.0005	---	0.00014 J	0.00014 U	NS	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00017 J	0.00029 J
Vanadium	---	---	0.00157 U	0.0025 J	NS	0.00157 U	0.00167 J	0.00157 U	0.004 J	0.00157 U	0.00157 U	0.00157 U
Zinc	2	---	0.01178	0.0125	NS	0.01204	0.01241	0.01024	0.01222	0.01157	0.01182	0.01249

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.
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Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS	NYSDEC- PFAS	8-R	9-OS	9-I	DUP01182022	9-R	10-OS	10-I	10-R	EB01182022	EB01192022
			1/19/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/18/2022	1/19/2022
TOTAL METALS, mg/L												
Aluminum	---	---	0.0371	0.00758 J	0.0777	0.065	0.042	1.58	0.0154	0.0449	NS	NS
Antimony	0.003	---	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00221 J	NS	NS
Arsenic	0.025	---	0.00171	0.00016 U	0.00016 U	0.00016 U	0.00038 J	0.00041 J	0.00016 U	0.00016 U	NS	NS
Barium	1	---	0.01697	0.00651	0.00602	0.00579	0.02066	0.01672	0.00113	0.00339	NS	NS
Beryllium	0.003	---	0.00012 J	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.00019 J	0.0001 U	0.0001 U	NS	NS
Boron	1	---	0.13	0.028 J	0.018 J	0.018 J	0.076	0.006 J	0.008 J	0.008 J	NS	NS
Cadmium	0.005	---	0.00029	0.00011 J	0.0002	0.00016 J	0.00101	0.00007 J	0.00005 U	0.00005 U	NS	NS
Calcium	---	---	159	5.04	8.07	7.96	38.8	3.3	8.87	8.2	NS	NS
Chromium	0.05	---	0.01692	0.01594	0.01218	0.01009	0.00155	0.00157	0.00048 J	0.00795	NS	NS
Cobalt	---	---	0.01312	0.00016 U	0.00016 U	0.00016 U	0.00113	0.0012	0.00016 U	0.00032 J	NS	NS
Copper	0.2	---	0.00505	0.00067 J	0.00065 J	0.00064 J	0.00192	0.00524	0.00038 U	0.00092 J	NS	NS
Iron	0.3**	---	2.46	0.102	0.229	0.189	0.569	1.96	0.0274 J	0.0697	NS	NS
Lead	0.025	---	0.00425	0.00034 U	0.00034 U	0.00034 U	0.00034 U	0.00044 J	0.00034 U	0.00034 U	NS	NS
Magnesium	35	---	41.7	1.16	1.96	1.83	9.87	0.845	2.48	1.71	NS	NS
Manganese	0.3**	---	4.152	0.0021	0.00503	0.00417	2.019	0.05222	0.00044 U	0.00594	NS	NS
Mercury	0.0007	---	0.00015 J	0.00016 J	0.00014 J	0.00015 J	0.00016 J	0.00013 J	0.00014 J	0.00016 J	NS	NS
Nickel	0.1	---	0.04774	0.00055 U	0.00055 U	0.00055 U	0.02791	0.00241	0.00055 U	0.00281	NS	NS
Potassium	---	---	2.76	0.768	0.788	0.787	8.78	0.585	0.804	0.616	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
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
Sodium	20	---	37.8	16.1	5.88	5.66	48.4	2.64	3.77	3.7	NS	NS
Thallium	0.0005	---	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	NS	NS
Vanadium	---	---	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	0.00189 J	0.00157 U	0.00157 U	NS	NS
Zinc	2	---	0.019	0.00996 J	0.0093 J	0.01048	0.01141	0.01201	0.00804 J	0.00986 J	NS	NS

Notes:
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TABLE 5

Summary of Analytical Results for Downgradient Drinking Water Supply Wells (1/19/2022 - 1/20/2022)
Town of Ramapo Landfill, Hillburn, New York

ANALYTE	NY-AWQS (1)	MCL (2)	NYSDEC- PFAS (3)	PW-1	PW-2	SVWC-93	SVWC-94	SVWC-95	SVWC-96	FB01202022
				1/19/2022	1/19/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022	1/20/2022
LEACHATE INDICATOR PARAMETERS, mg/L										
Alkalinity, Total	---	---	---	31.2	69.8	46.4	53.1	55.6	56.4	NS
Chemical Oxygen Demand	---	---	---	25.4	91.8	2.7 U	2.7 U	2.7 U	4.8 J	NS
Hardness	---	---	---	2.7 U	2.7 U	66.08	74.72	82.13	78.81	NS
Nitrogen, Total Kjeldahl	---	---	---	0.174 J	0.109 J	0.155 J	0.137 J	0.25 J	0.079 J	NS
VOLATILE ORGANIC COMPOUNDS, µg/L										
1,1-Dichloroethane	5	---	---	0.16 U	0.16 U	0.7 U	0.7 U	0.7 U	0.7 U	NS
Benzene	1	5	---	0.19 U	0.19 U	0.16 U	0.16 U	0.16 U	0.16 U	NS
Chlorobenzene	5	100	---	0.16 U	0.16 U	0.7 U	0.7 U	0.7 U	0.7 U	NS
Vinyl chloride	2	2	---	0.19 U	0.19 U	0.07 U	0.07 U	0.07 U	0.07 U	NS
Total VOCs	---	---	---	ND	ND	ND	ND	ND	ND	NS
1,4 DIOXANE, µg/L										
1,4-Dioxane	---	1 / 1***	---	NS	NS	NS	0.108 J	0.57	NS	NS
PERFLUORINATED ALKYL ACIDS (PFAS), ng/L										
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	---	---	---	NS	NS	NS	1.11 U	1.14 U	NS	1.18 U
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	---	---	---	NS	NS	NS	1.22 U	1.25 U	NS	1.3 U
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	---	---	---	NS	NS	NS	0.738 U	0.754 U	NS	0.782 U
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	---	---	---	NS	NS	NS	0.595 U	0.608 U	NS	0.63 U
Perfluorobutanesulfonic Acid (PFBS)	---	---	---	NS	NS	NS	1.01 J	1.8 J	NS	0.231 U
Perfluorobutanoic Acid (PFBA)	---	---	---	NS	NS	NS	0.973 J	3.38	NS	0.397 U
Perfluorodecanesulfonic Acid (PFDS)	---	---	---	NS	NS	NS	0.899 U	0.92 U	NS	0.953 U
Perfluorodecanoic Acid (PFDA)	---	---	---	NS	NS	NS	0.279 U	0.285 U	NS	0.296 U
Perfluorododecanoic Acid (PFDoA)	---	---	---	NS	NS	NS	0.341 U	0.349 U	NS	0.362 U
Perfluoroheptanesulfonic Acid (PFHpS)	---	---	---	NS	NS	NS	0.631 U	0.646 U	NS	0.669 U
Perfluoroheptanoic Acid (PFHpA)	---	---	---	NS	NS	NS	0.635 J	1.15 J	NS	0.219 U
Perfluorohexanesulfonic Acid (PFHxS)	---	---	---	NS	NS	NS	0.532 J	0.924 J	NS	0.366 U
Perfluorohexanoic Acid (PFHxA)	---	---	---	NS	NS	NS	1.6 J	1.78 J	NS	0.319 U
Perfluorononanoic Acid (PFNA)	---	---	---	NS	NS	NS	0.881 J	5.92	NS	0.303 U
Perfluorooctanesulfonamide (FOSA)	---	---	---	NS	NS	NS	0.532 U	0.544 U	NS	0.564 U
Perfluorooctanesulfonic Acid (PFOS)	---	10 / 10****	10	NS	NS	NS	1.88 F	4.58	NS	0.49 U
Perfluorooctanoic Acid (PFOA)	---	10 / 10****	10	NS	NS	NS	1.62 J	3.34	NS	0.23 U
Perfluoropentanoic Acid (PFPeA)	---	---	---	NS	NS	NS	2.56	2.76	NS	0.813 J
Perfluorotetradecanoic Acid (PFTA)	---	---	---	NS	NS	NS	0.859 JF	1.04 J	NS	0.992 J
Perfluorotridecanoic Acid (PFTrDA)	---	---	---	NS	NS	NS	0.3 U	0.307 U	NS	0.318 U
Perfluoroundecanoic Acid (PFUnA)	---	---	---	NS	NS	NS	0.239 U	0.274 J	NS	0.253 U
PFAS, Total	---	---	---	NS	NS	NS	12.55	26.948	NS	1.805
TOTAL METALS, mg/L										
Aluminum	---	0.05-0.2**	---	0.032 U	0.032 U	0.00327 U	0.00327 U	0.00327 U	0.00327 U	NS
Antimony	0.006	0.006	---	0.0021 J	0.0012 J	0.00042 U	0.00042 U	0.00042 U	0.00042 U	NS
Arsenic	0.01	0.01	---	0.0002 U	0.0002 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	NS
Barium	2.0	2.0	---	0.0056	0.0014	0.00775	0.0118	0.01125	0.0086	NS
Beryllium	0.004	0.004	---	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	NS
Boron	1	---	---	0.024 J	0.011 J	0.024 J	0.025 J	0.026 J	0.031	NS
Cadmium	0.005	0.005	---	0.0001 U	0.0001 U	0.00005 U	0.00005 U	0.00005 U	0.00005 U	NS
Calcium	---	---	---	7.11	31.1	18.3	20.8	22.5	21.8	NS
Chromium	0.1	0.1	---	0.0003 J	0.0002 U	0.00052 J	0.00017 U	0.0002 J	0.00017 U	NS
Cobalt	---	---	---	0.002 U	0.002 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	NS
Copper	---	1.3	---	0.0938	0.0074	0.00262	0.00362	0.03104	0.00465	NS
Iron	0.3*	0.3**	---	0.01 J	0.104	0.0191 U	0.0191 U	0.0191 U	0.0191 U	NS
Lead	---	0.015	---	0.0076	0.0003 U	0.00034 U	0.00034 U	0.00061 J	0.00034 U	NS
Magnesium	---	---	---	1.86	3.45	4.92	5.56	6.27	5.92	NS
Manganese	0.3*	0.05**	---	0.002 U	0.005 J	0.00044 U	0.00044 U	0.03345	0.00044 U	NS
Mercury	0.002	0.002	---	0.0001 J	0.0001 J	0.00009 U	0.00009 U	0.00015 J	0.00011 J	NS
Nickel	---	---	---	0.0007 J	0.0006 U	0.00055 U	0.00055 U	0.00064 J	0.00055 U	NS
Potassium	---	---	---	1.03 J	1.07 J	1.74	1.78	1.65	1.45	NS
Selenium	0.05	0.05	---	0.0017 U	0.0017 U	0.00173 U	0.00173 U	0.00173 U	0.00173 U	NS
Silver	0.1	0.1**	---	0.0002 U	0.0002 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	NS
Sodium	--- ⁴	--- ⁴	---	18.4	7.37	46.1	50.8	44.5	54.9	NS
Thallium	0.002	0.002	---	0.0001 U	0.0001 U	0.00014 U	0.00014 U	0.00016 J	0.00014 U	NS
Vanadium	---	---	---	0.0016 U	0.0016 U	0.00157 U	0.00157 U	0.00157 U	0.00157 U	NS
Zinc	5.0	5.0**	---	0.1642	0.0263	0.01706	0.01793	0.05367	0.01458	NS

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 January 19, 2022 / USEPA MCLs: USEPA - Primary Drinking Water Standards
(3): NYSDEC: Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), June 2021
(4): While there is no Maximum Contaminant Level (MCL) for Sodium, people on severely 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.
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.
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 10 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	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	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	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	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	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	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	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	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	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	
Jan-22	150	NA	292	NA	12.4	NA	314	NA	NA	NA	NA	21.3	NA	9.63 J	3.27 U	37.1	7.58 J	77.7	42	1,580	15.4	44.9	113.0	51.9	NA	32 U	32 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

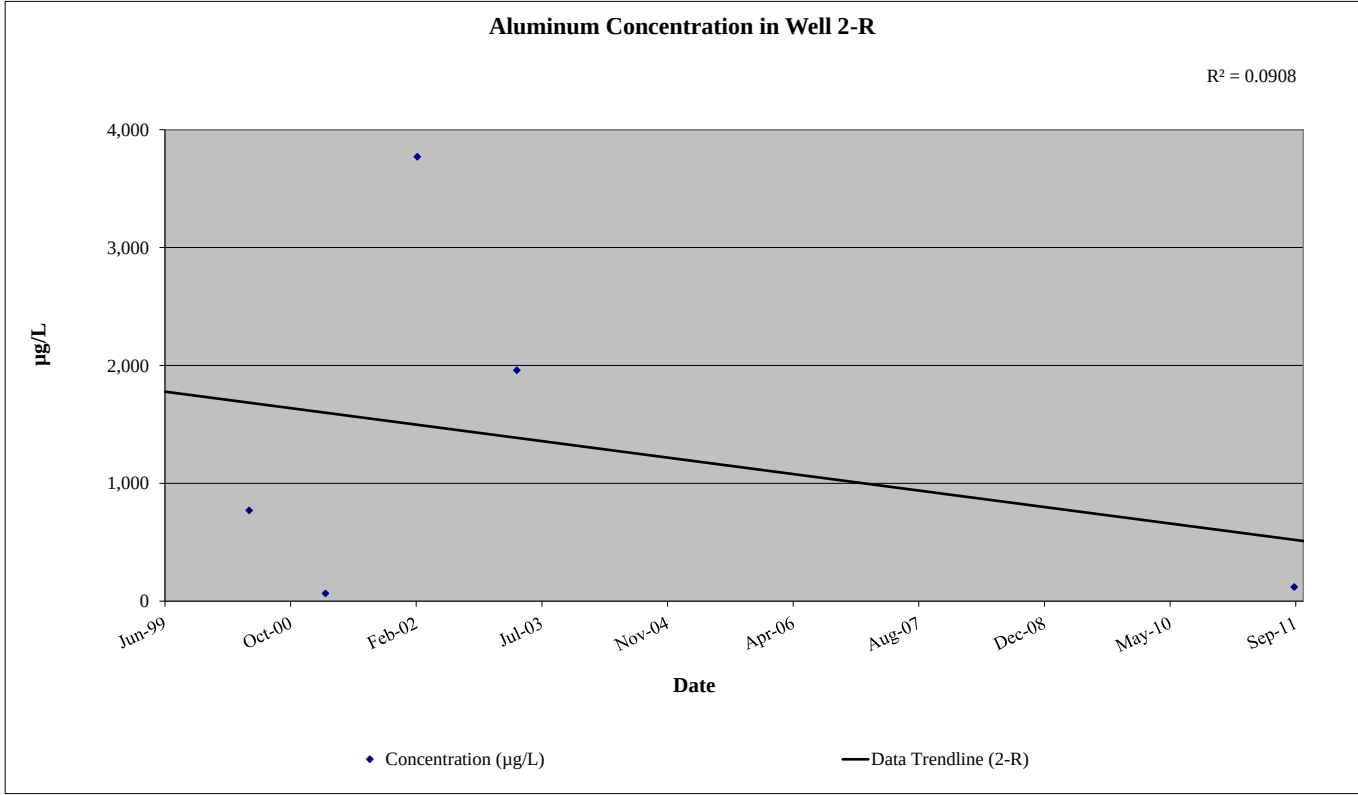
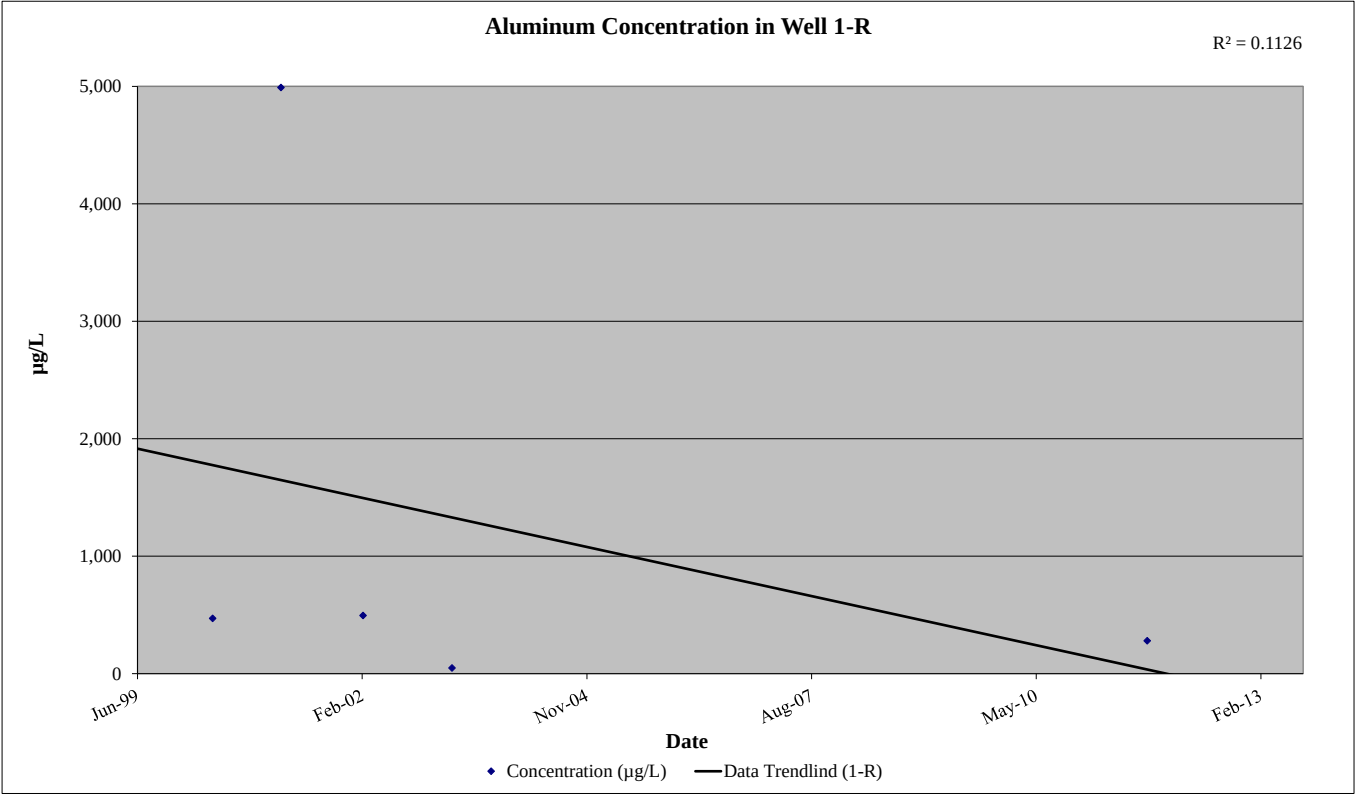
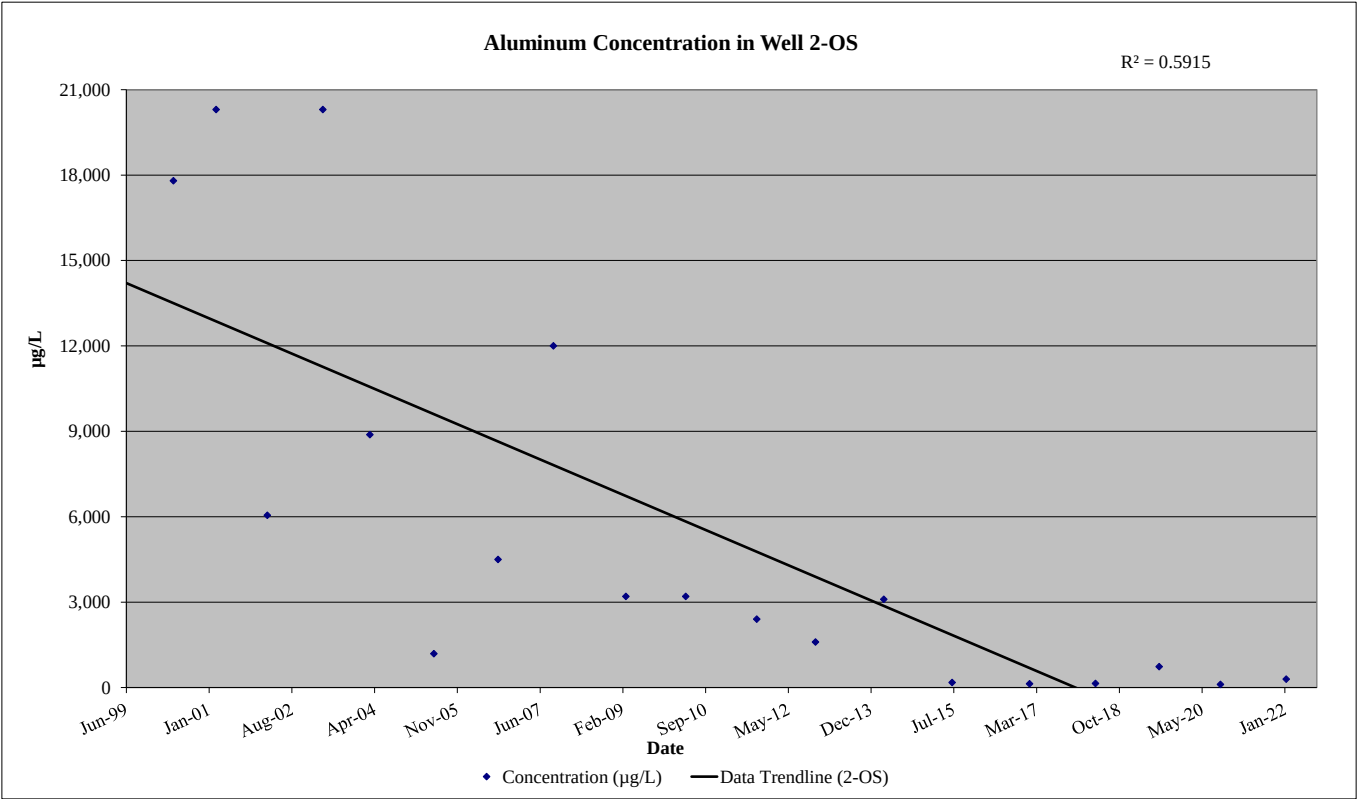
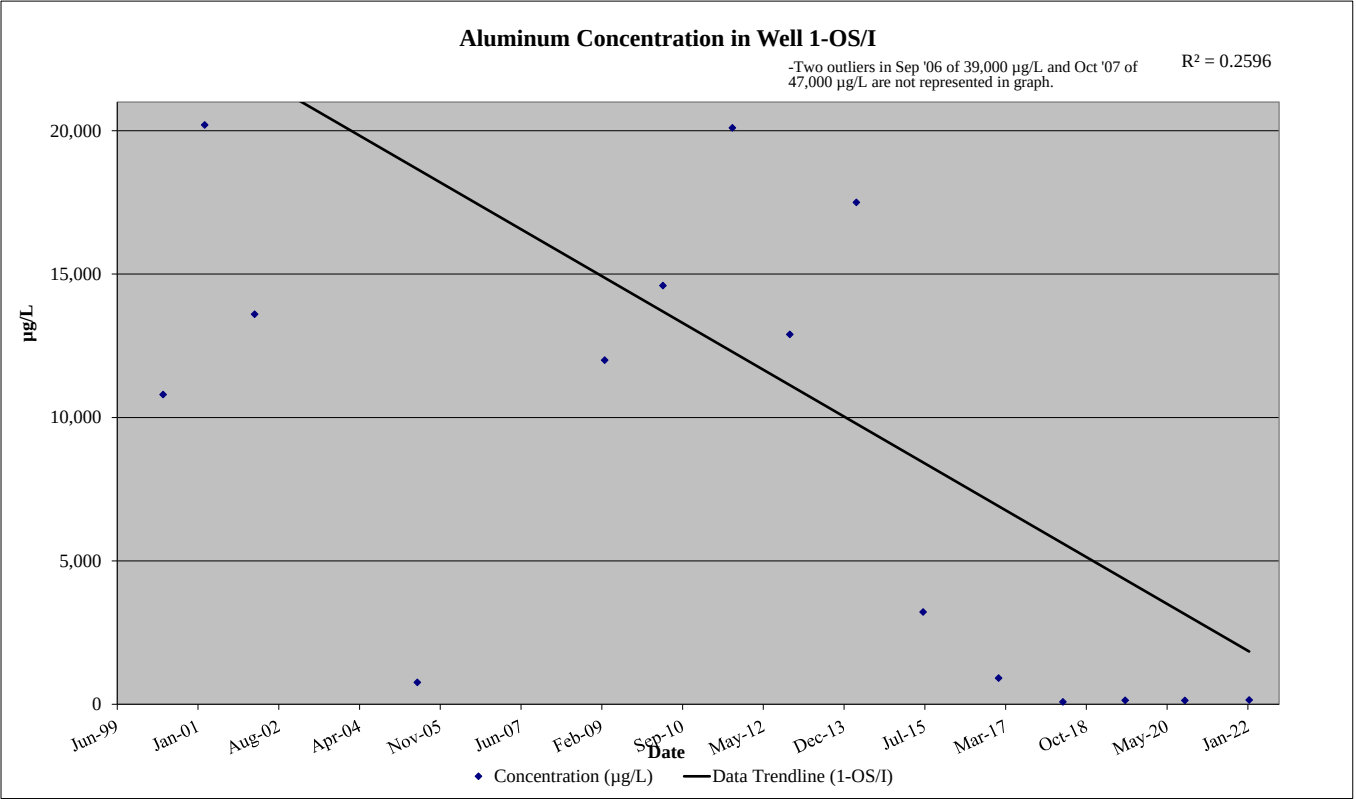


Table 6

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

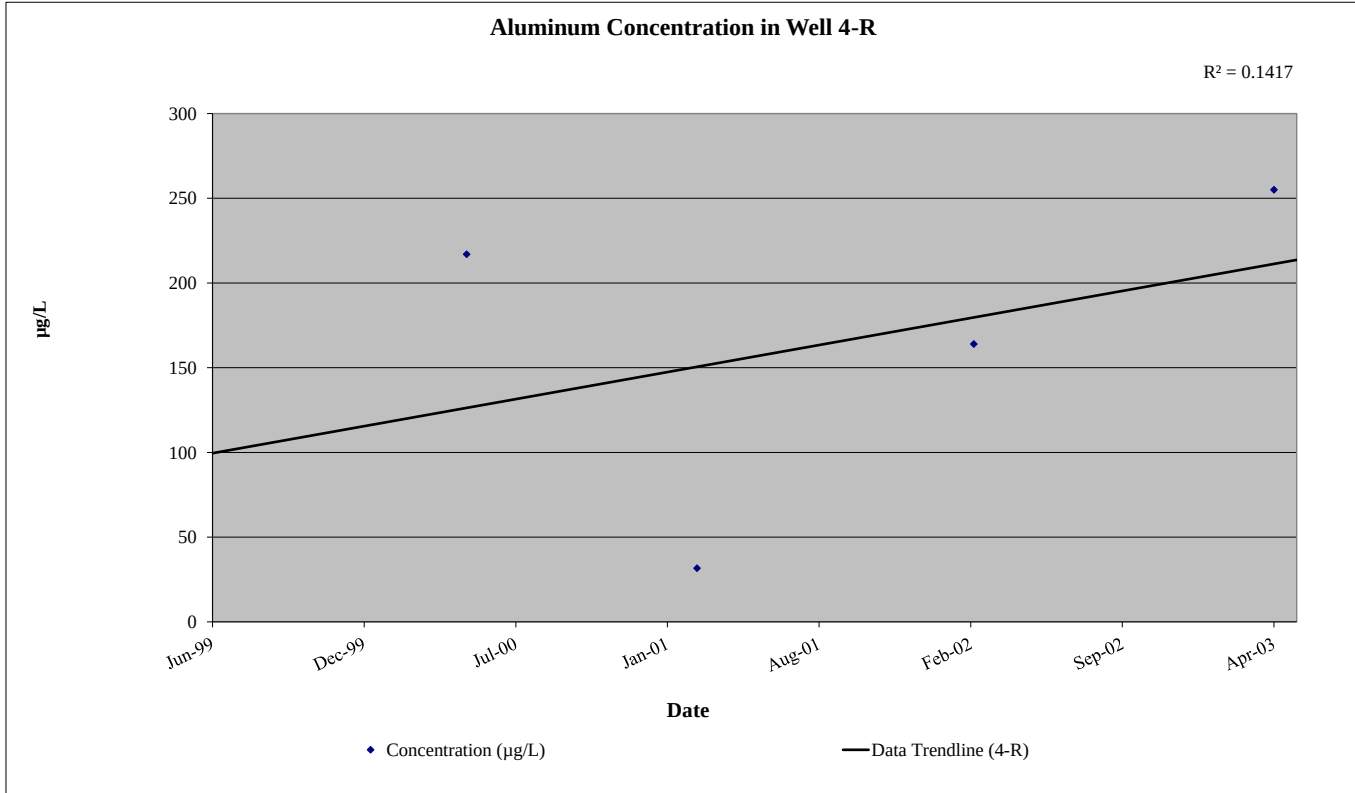
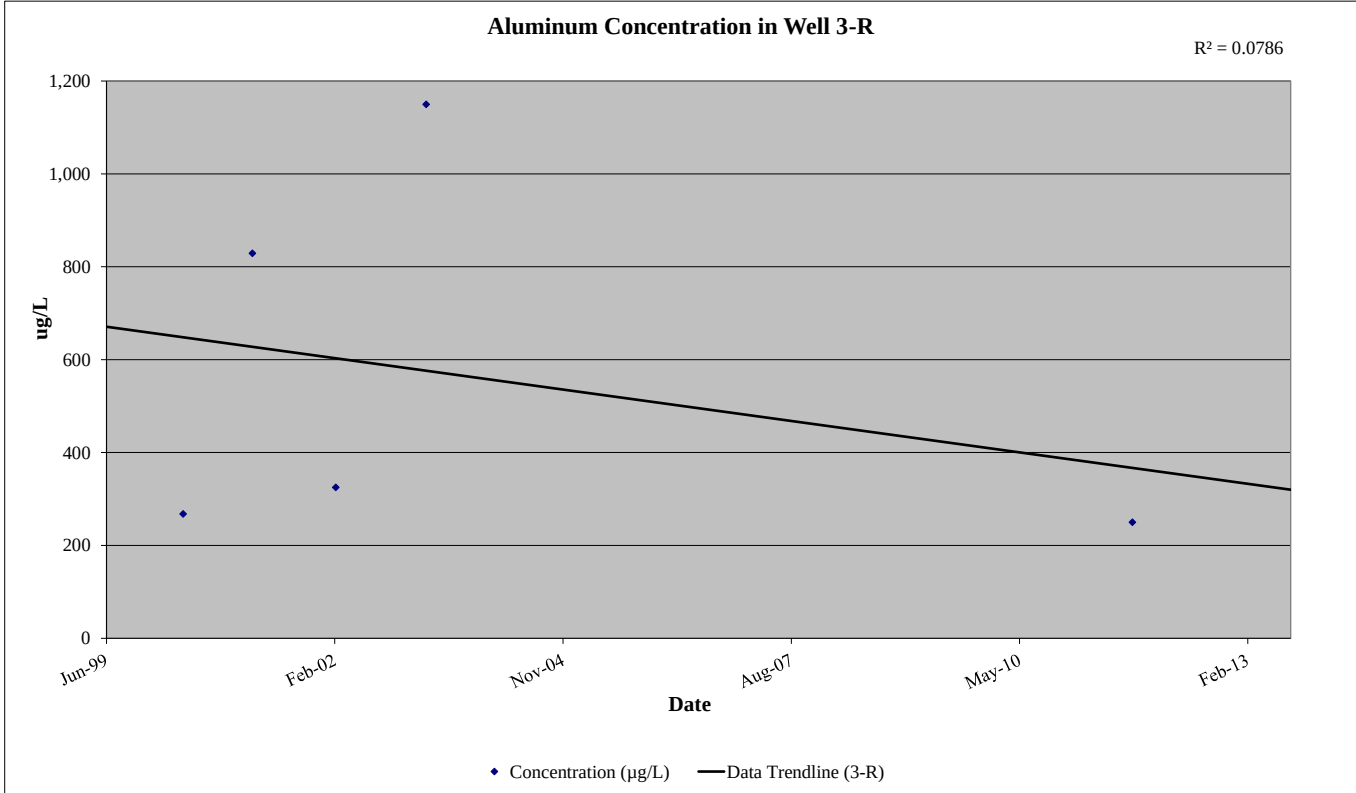
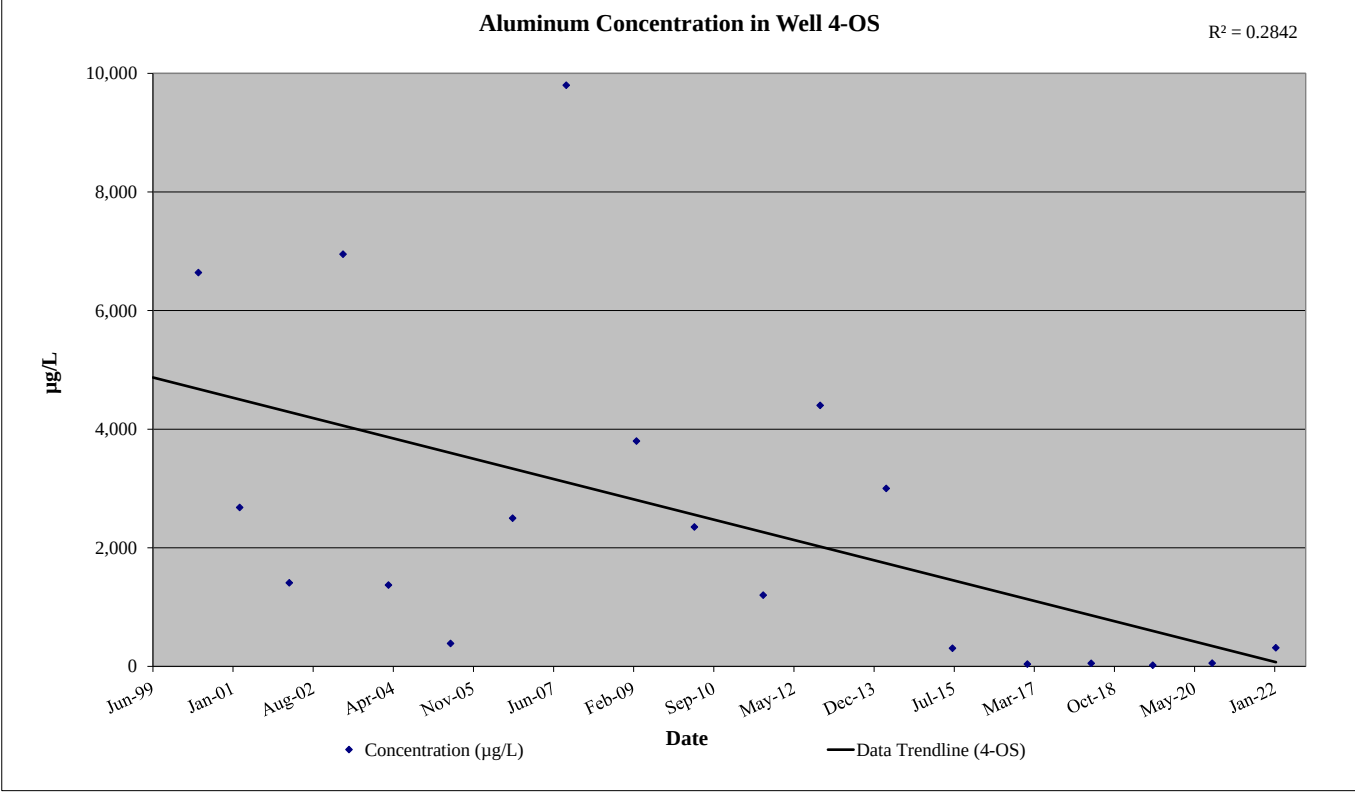
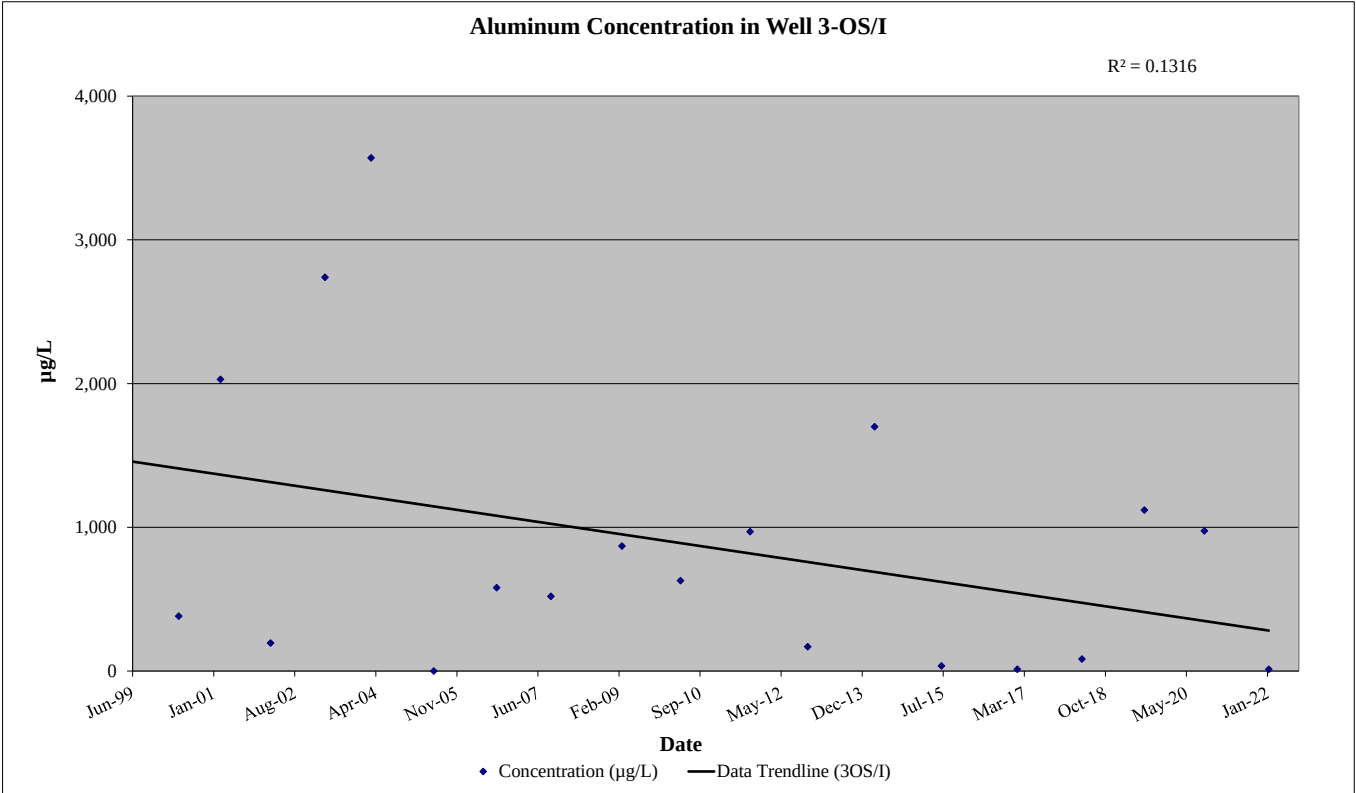


Table 6

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

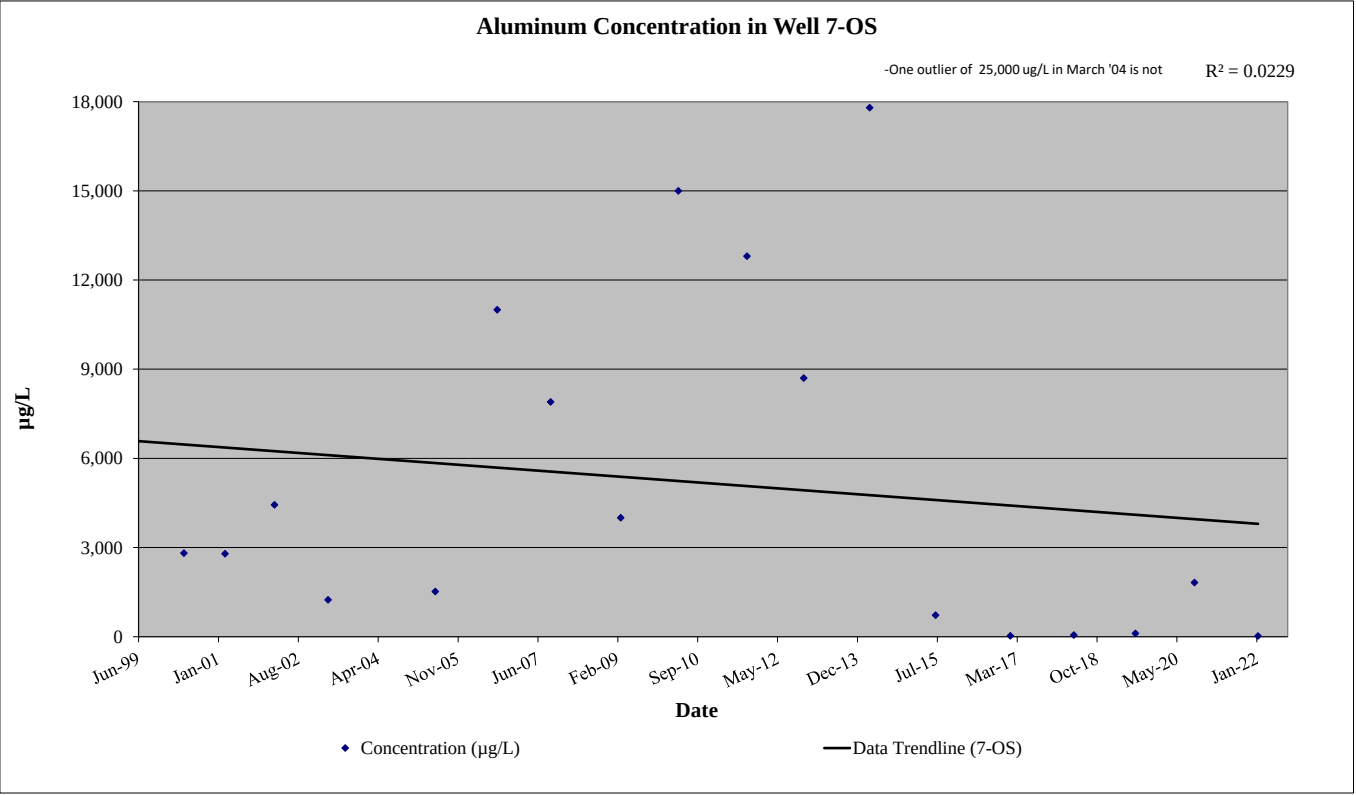
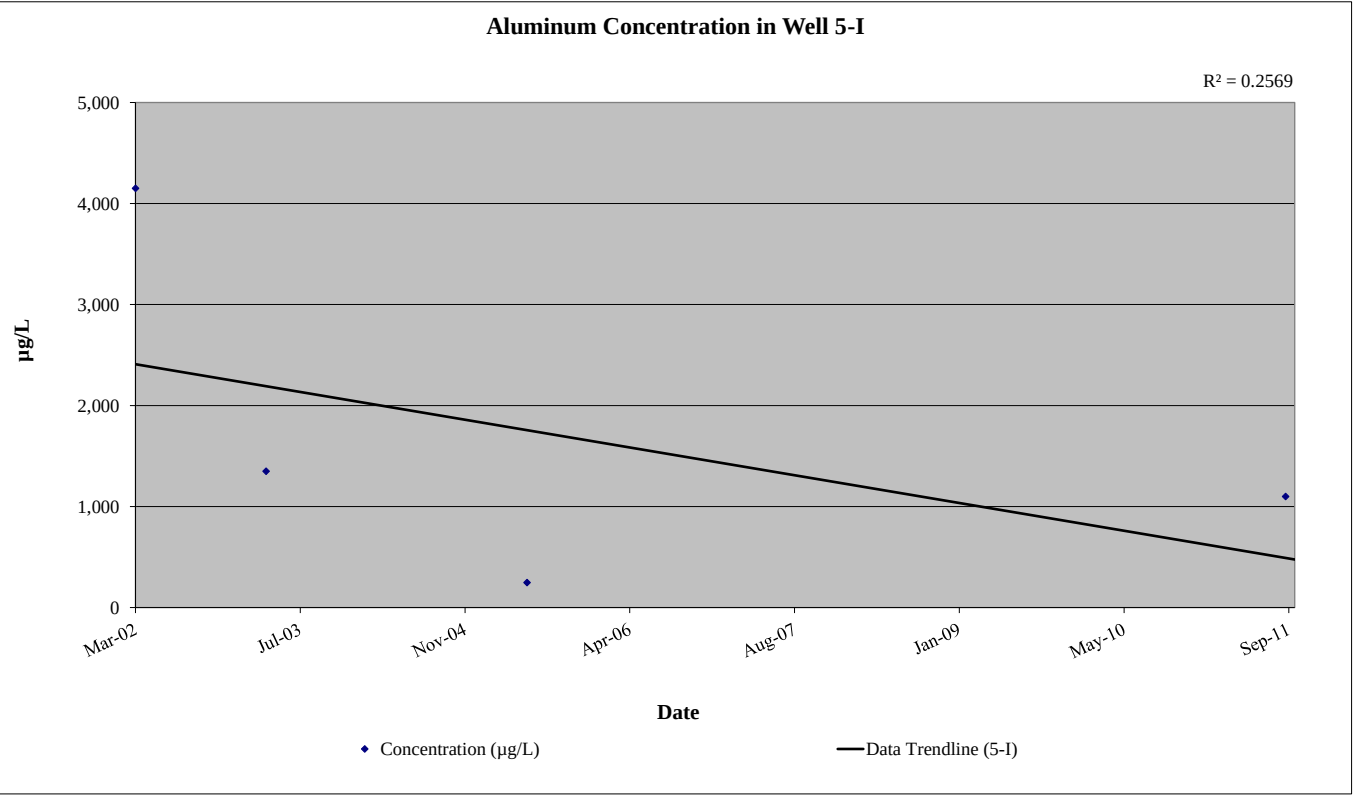
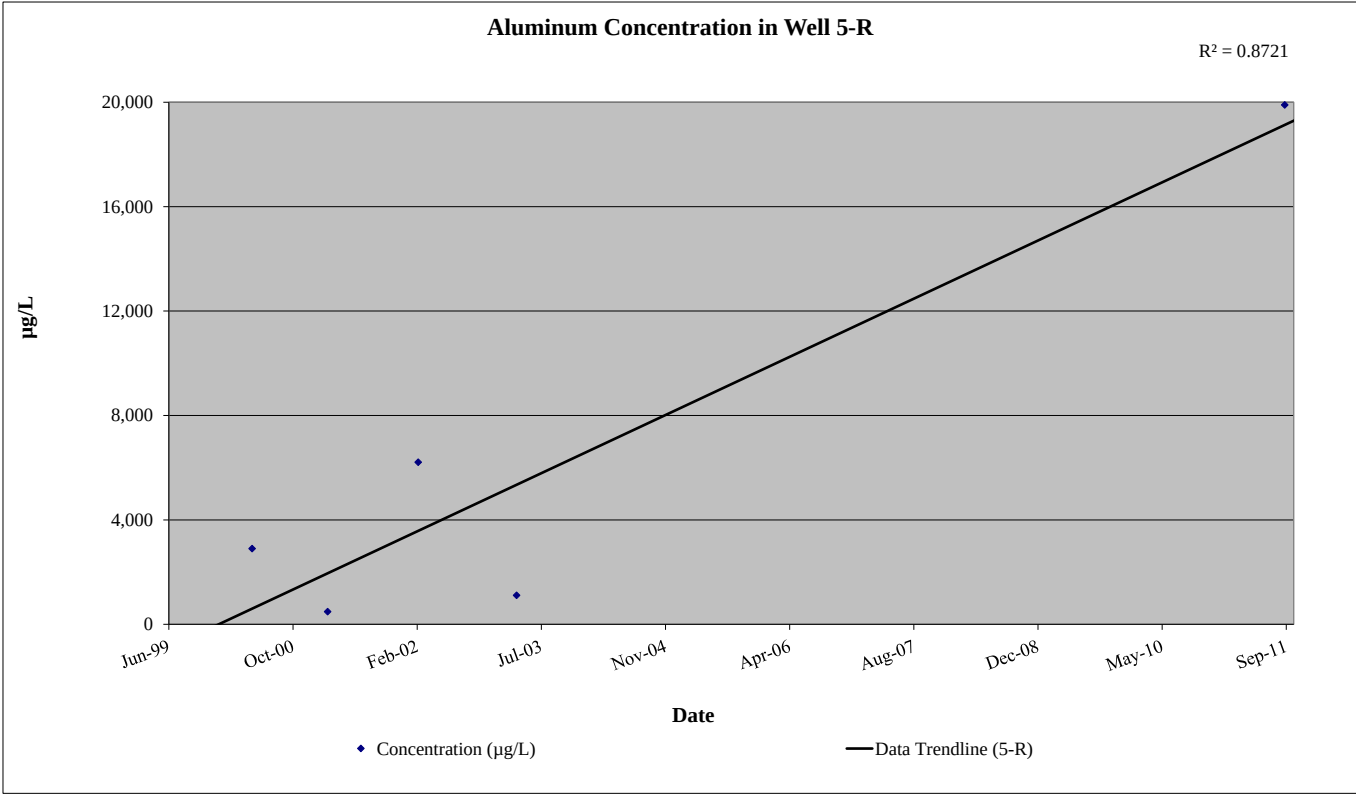
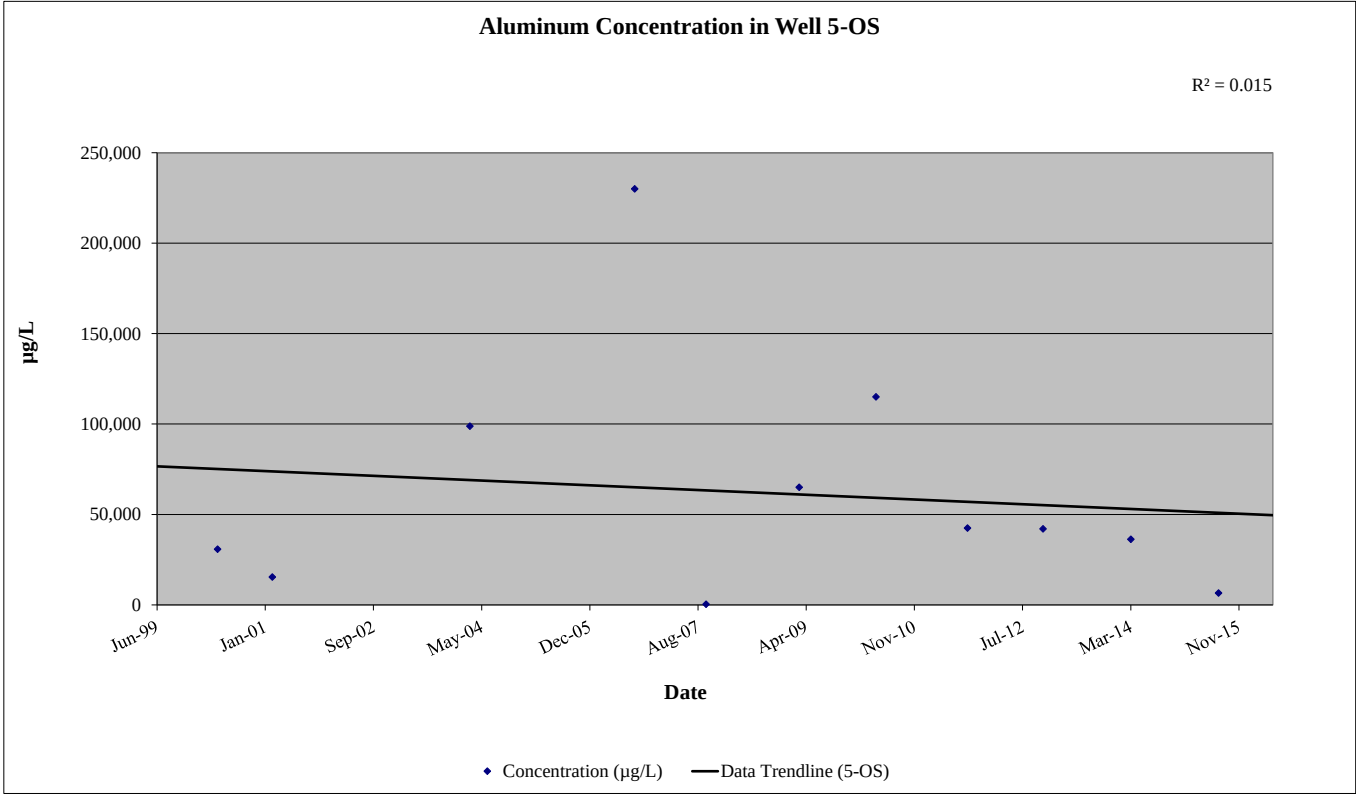


Table 6
Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill

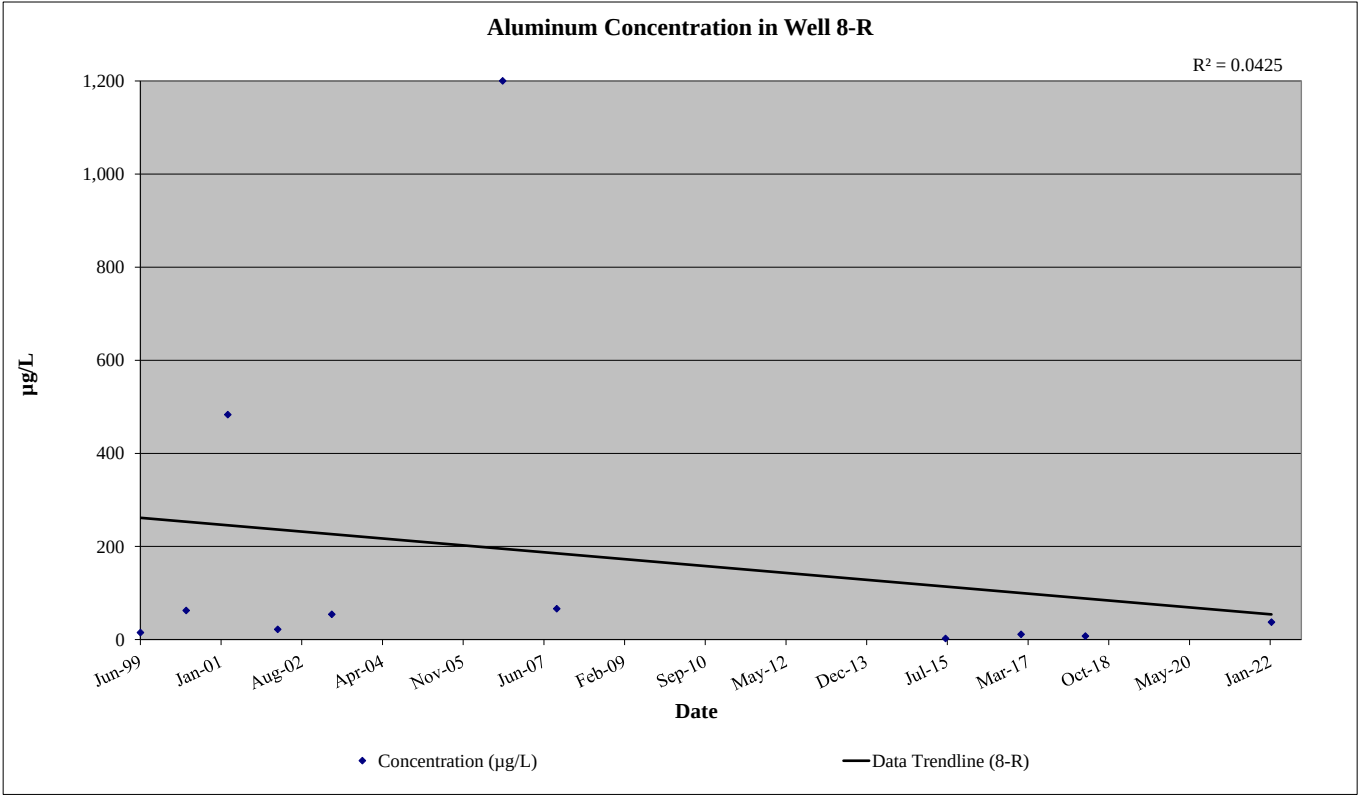
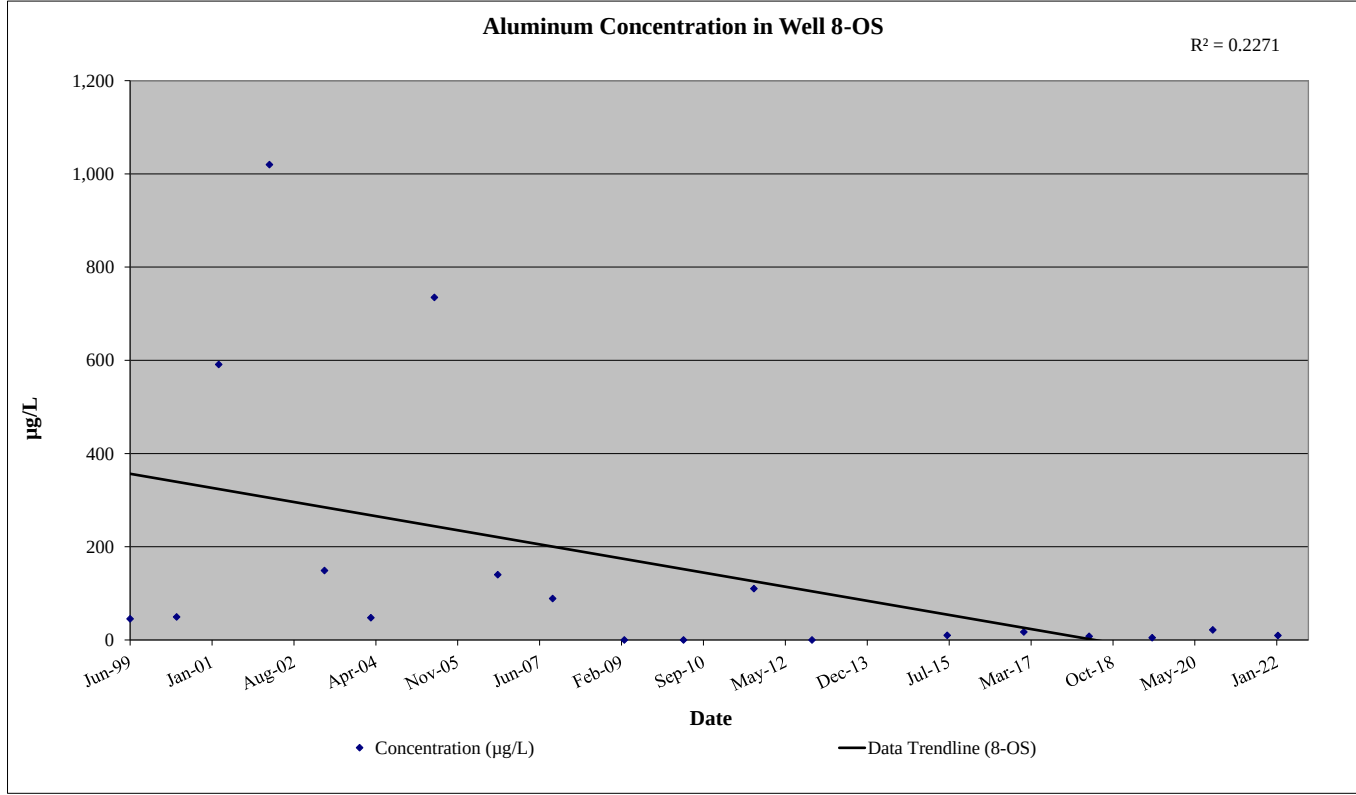
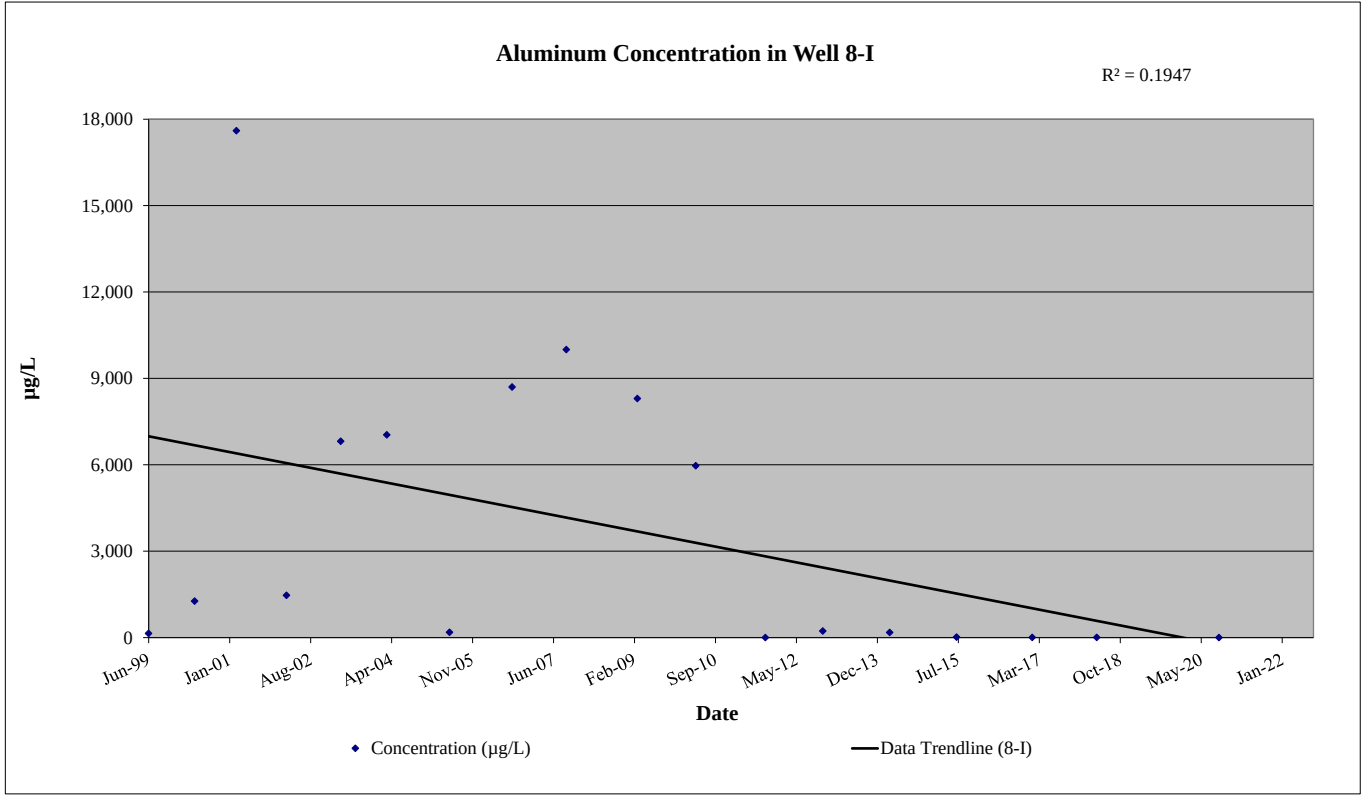
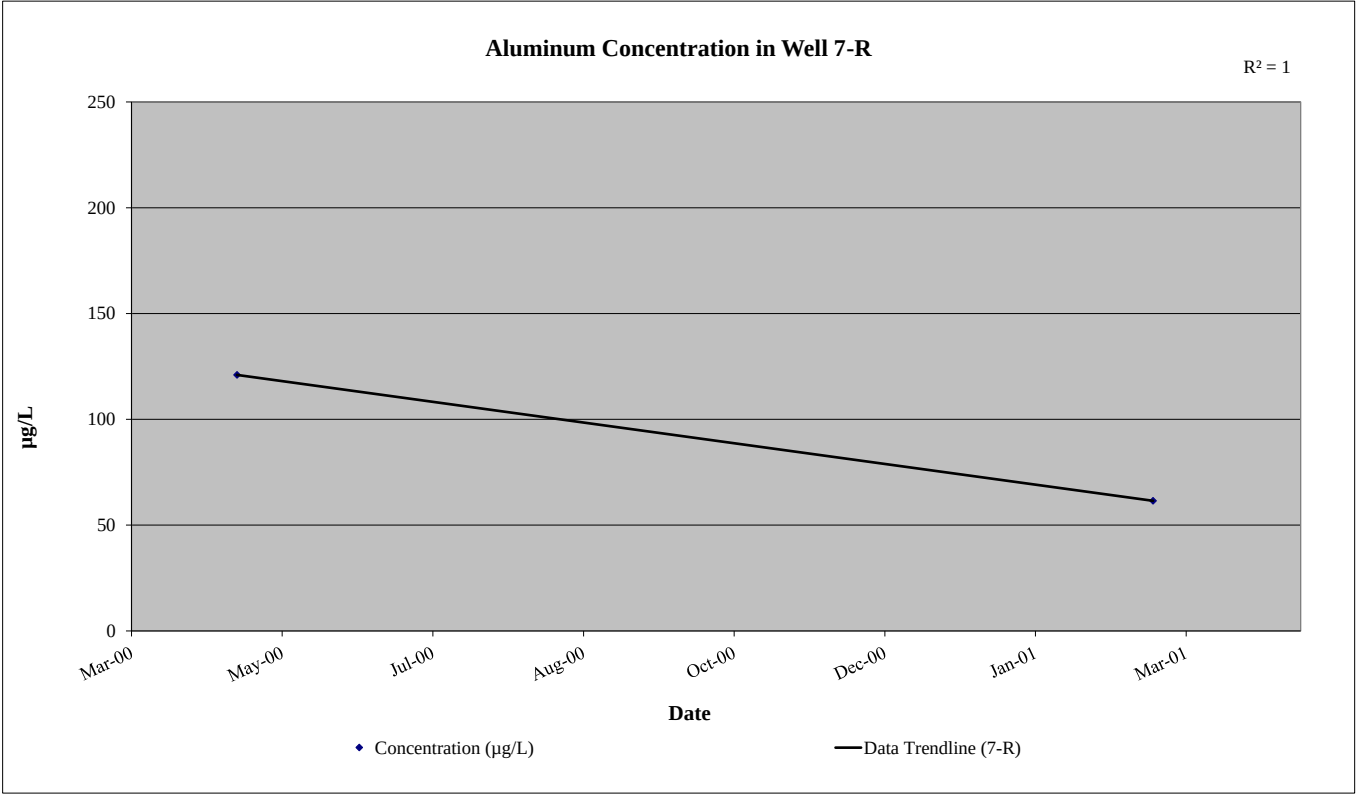


Table 6
Summary of Historical Groundwater Quality Results - Aluminum (µg/L)
Town of Ramapo Landfill

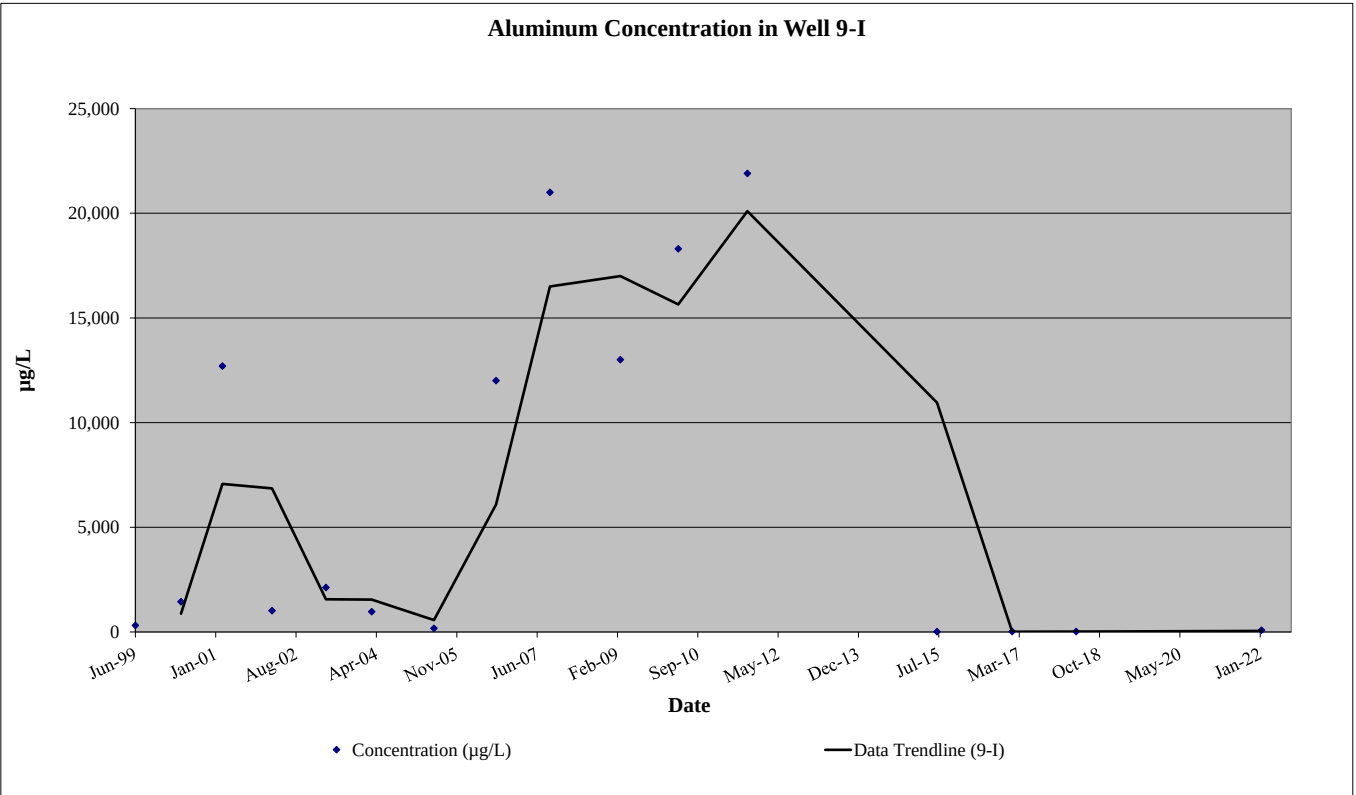
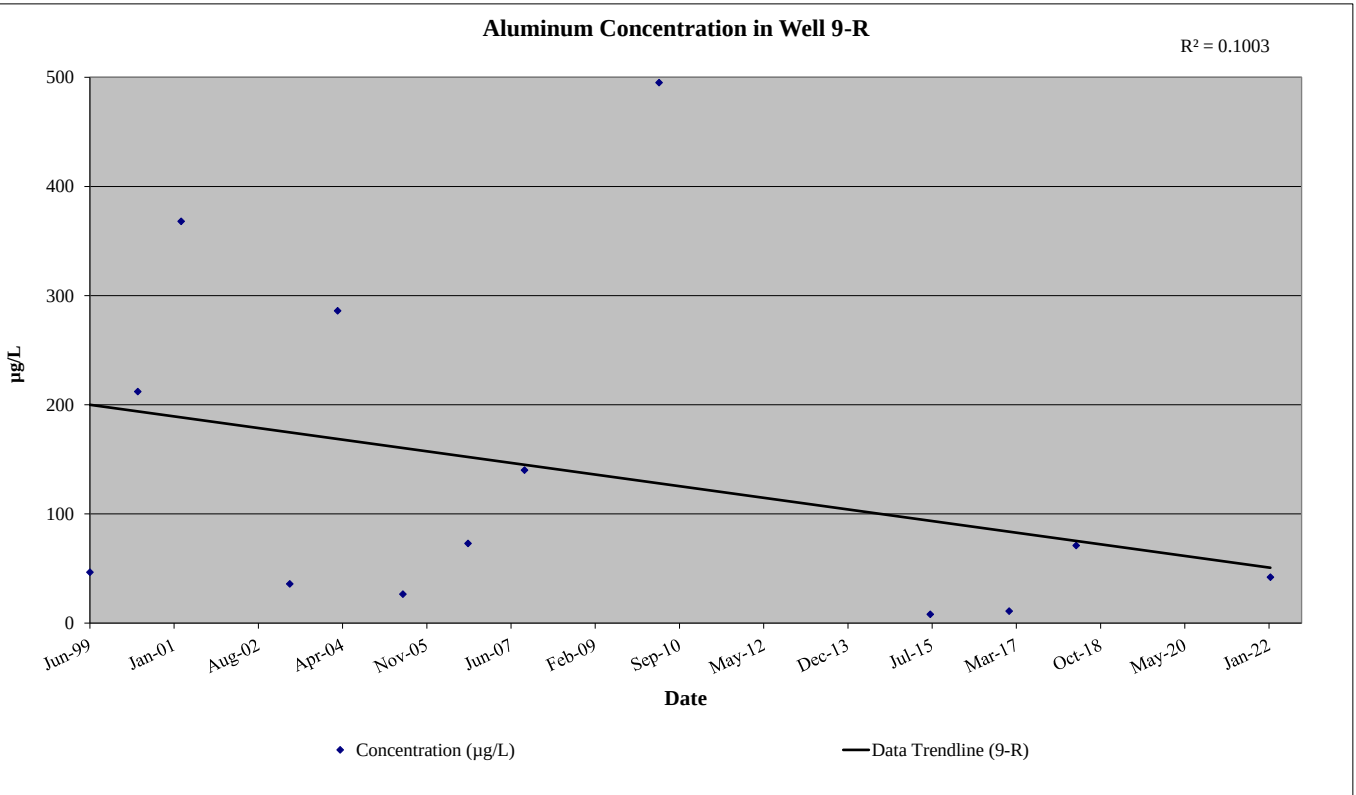
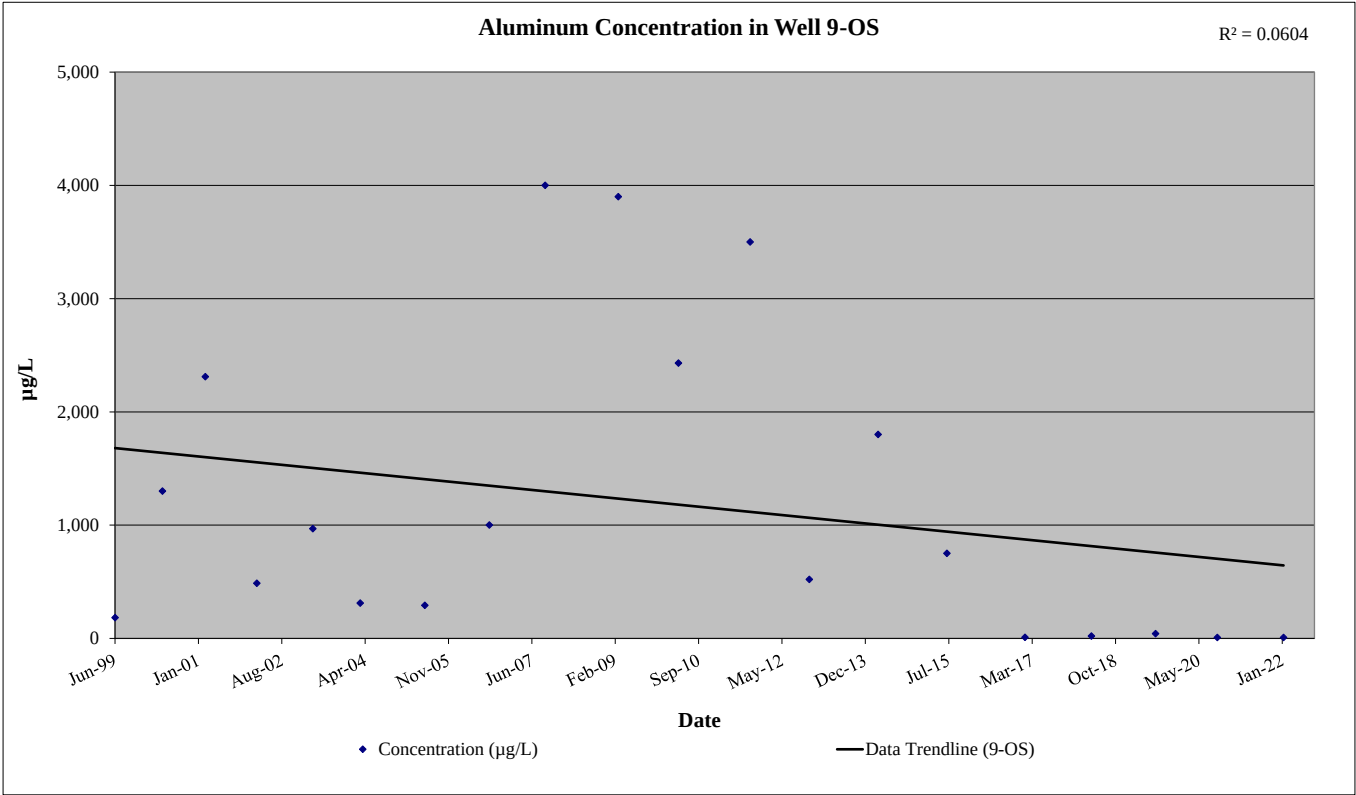


Table 7

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	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	NA	< 2	NA	1.9 J	NA	NA	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	0.1 U	0.1 U	0.1 U	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	0.5 U	NA	0.5 U	NA	0.5 U	NA	0.5 U	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	
Jan-22	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	0.12 J	0.1 U	0.1 U	0.1 U	0.19 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.

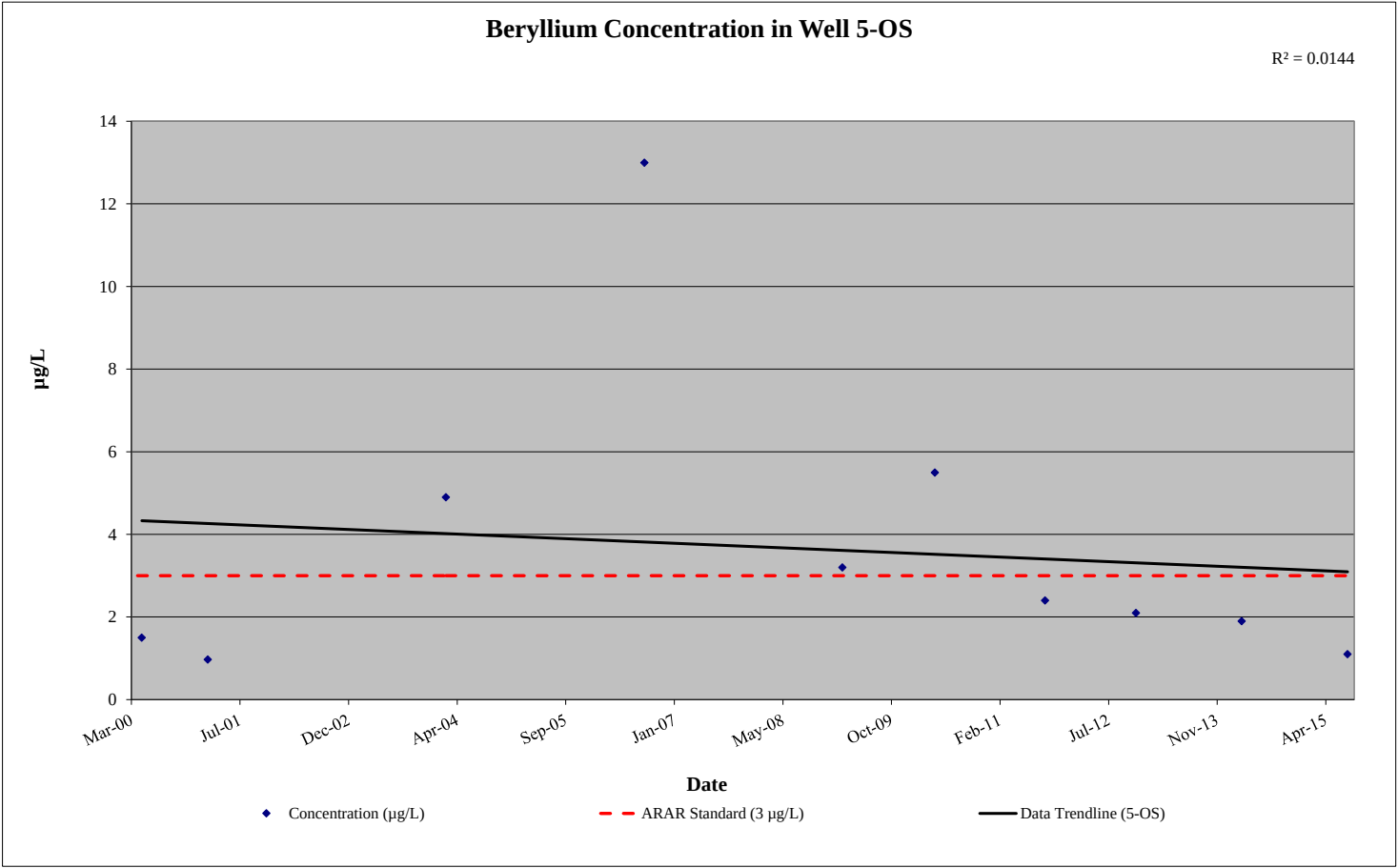


Table 8

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	
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	NA	< 3	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	NA	< 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	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	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	0.05 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	
Jan-22	0.05 U	NA	0.05 U	NA	0.05 U	NA	0.05 U	NA	NA	NA	NA	0.05 U	NA	0.05 U	0.05 U	0.29	0.11 J	0.2	1.01	0.07 J	0.05 U	0.05 U	0.05 U	NA	0.1 U	0.1 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.

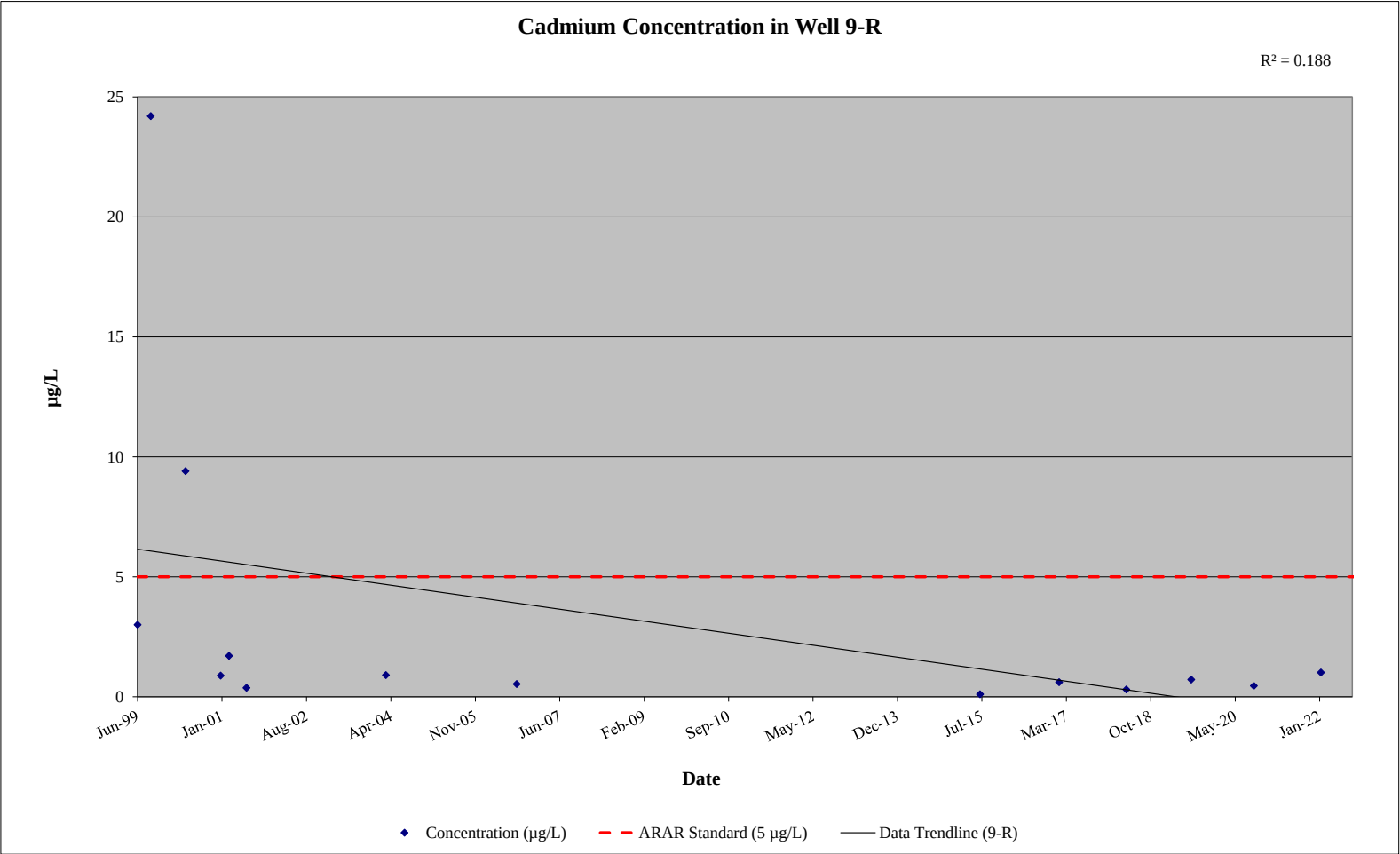


Table 9

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

Well ID DATE	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
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	NA	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
Jan-22	1.99	NA	9.27	NA	1.42	NA	9.11	NA	NA	NA	NA	0.7 J	NA	4.57	0.38 U	5.05	0.67 J	0.65 J	1.92	5.24	0.38 U	0.92 J	0.81 J	1.03	NA	93.8	7.4	2.62	3.62	31.04	4.65

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.

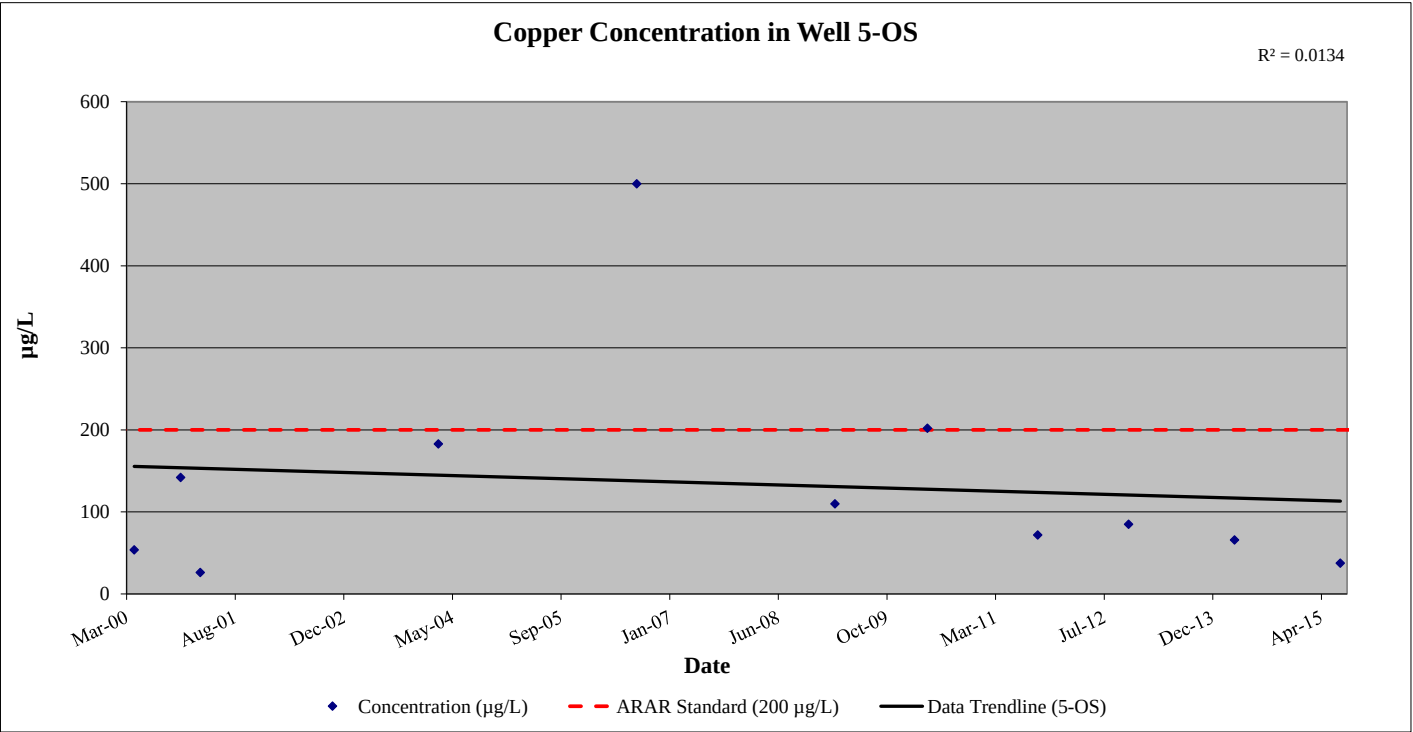


Table 10

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

Well ID DATE	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	
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	< 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	0.14 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	
Jan-22	0.44 J	NA	0.67 J	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	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	2.21 J	0.42 U	0.42 U	NA	2.1 J	1.2 J	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.

Table 10

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

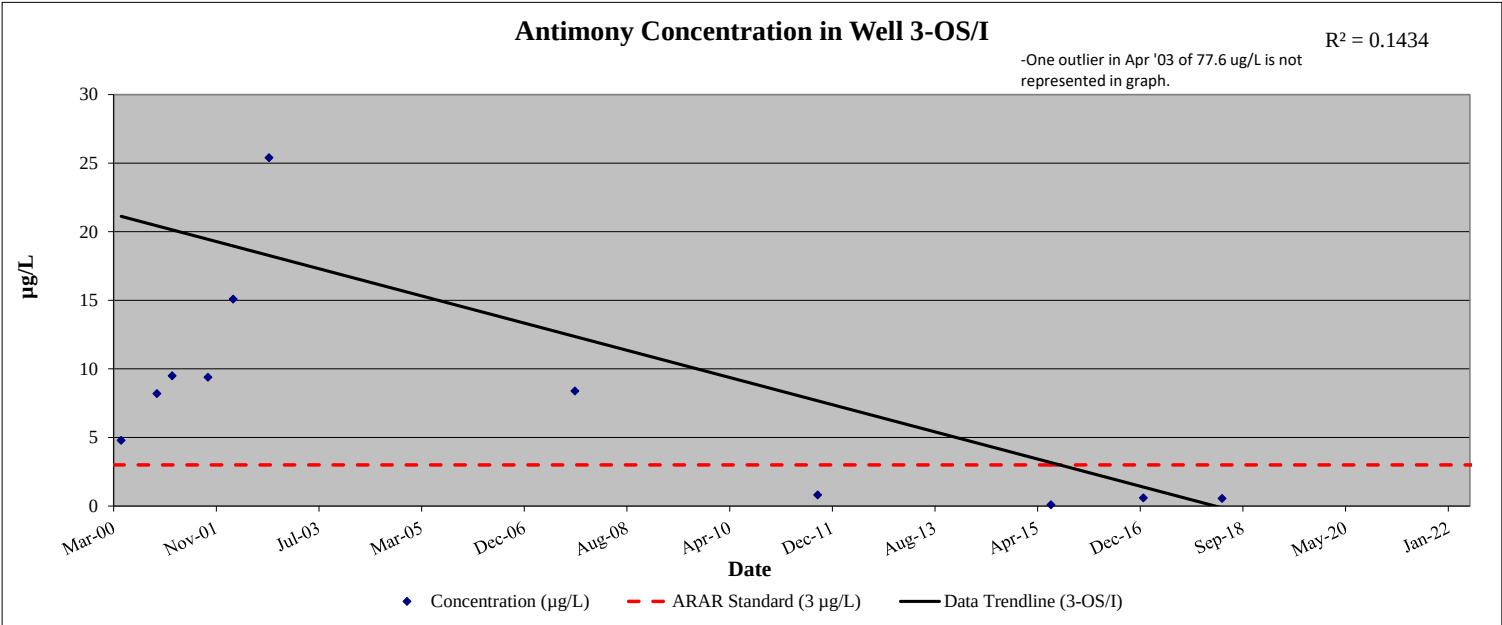
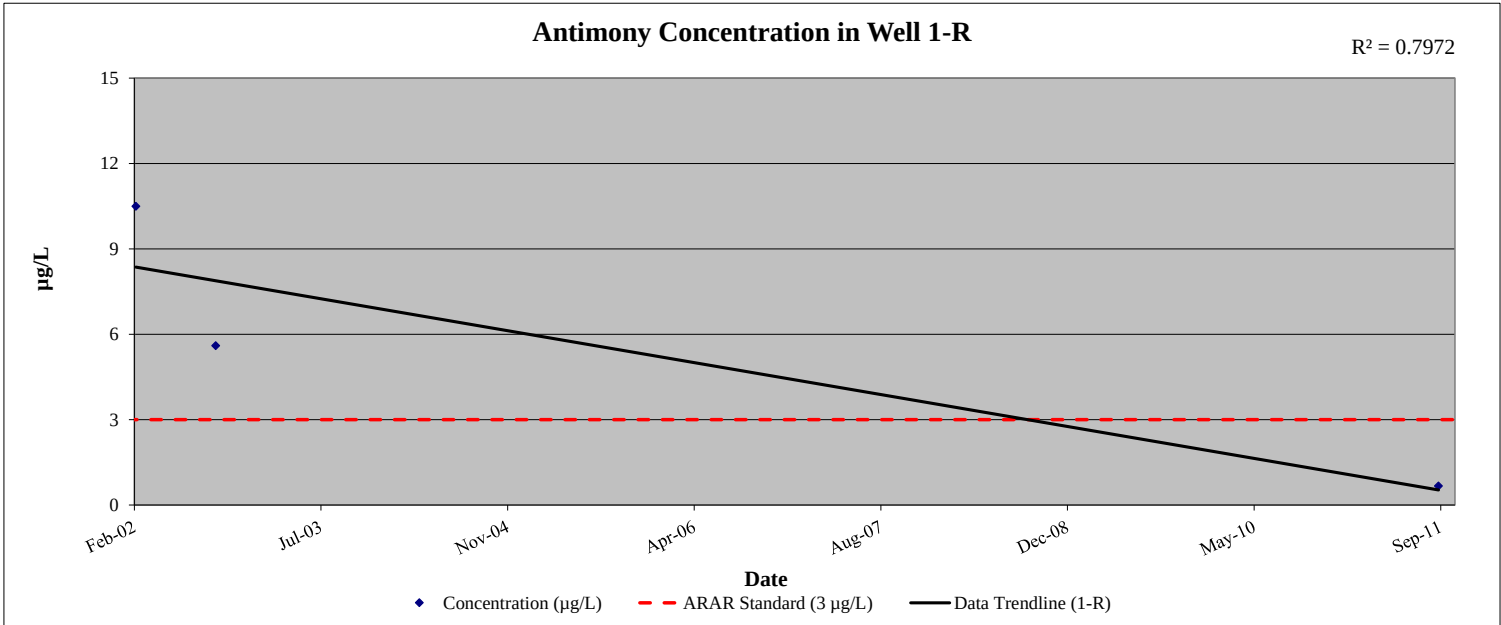
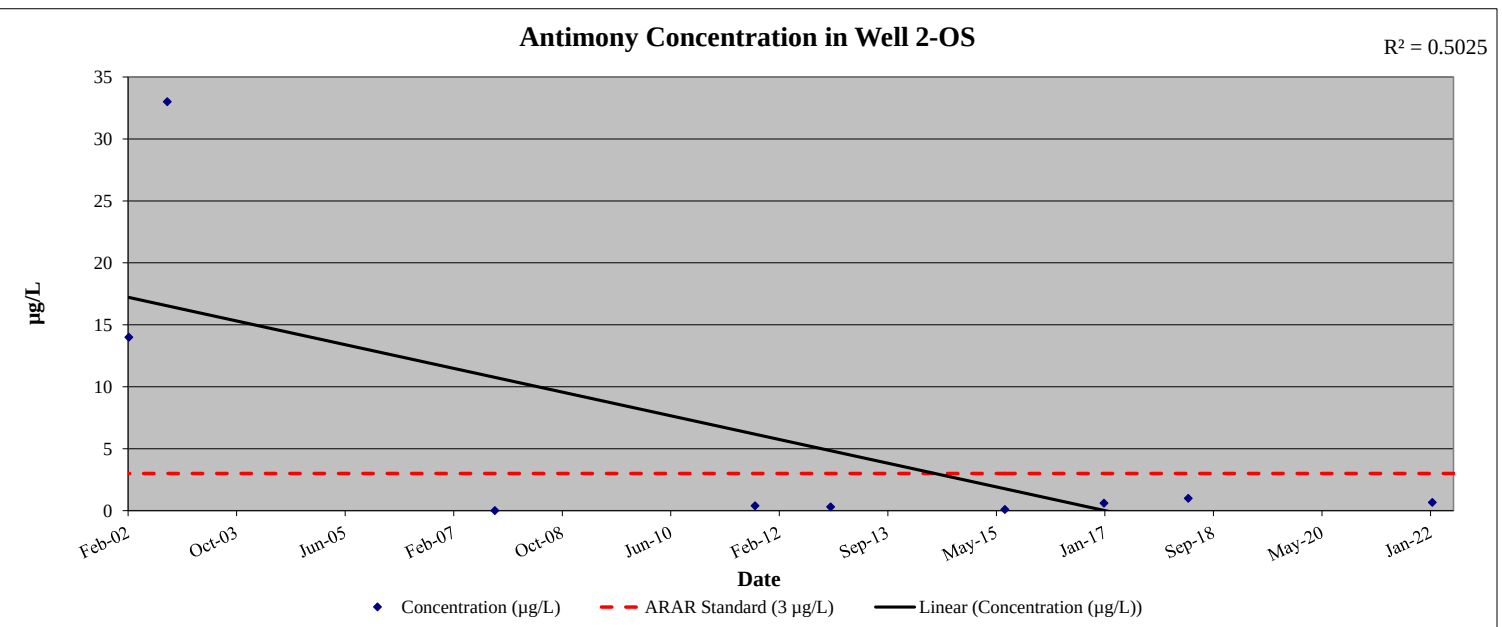
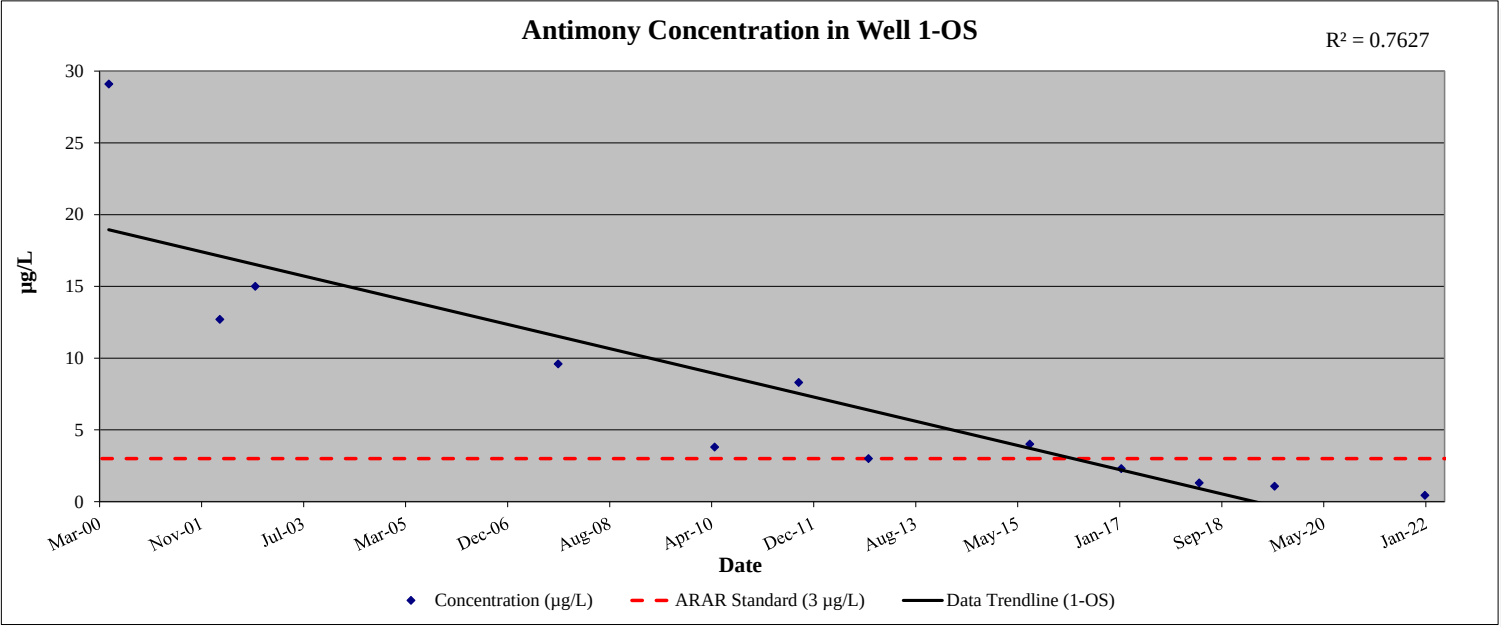


Table 10

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

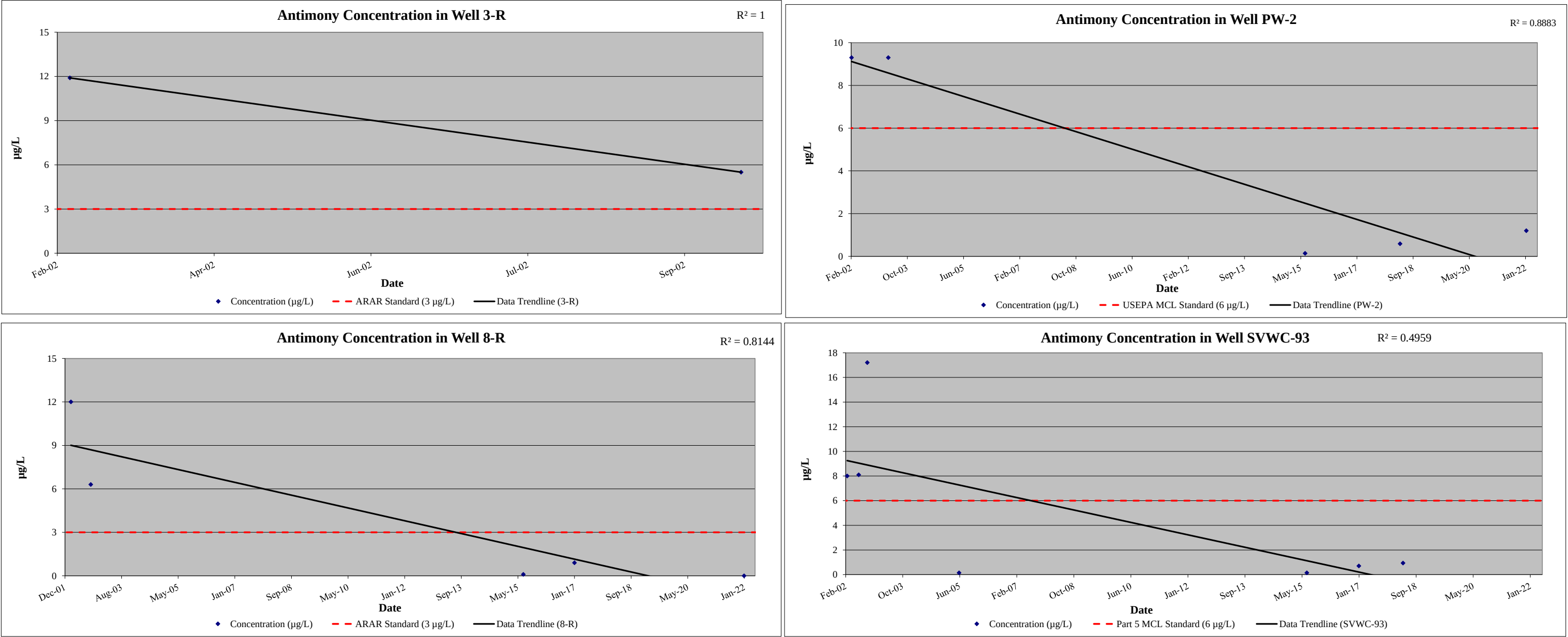


Table 10

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

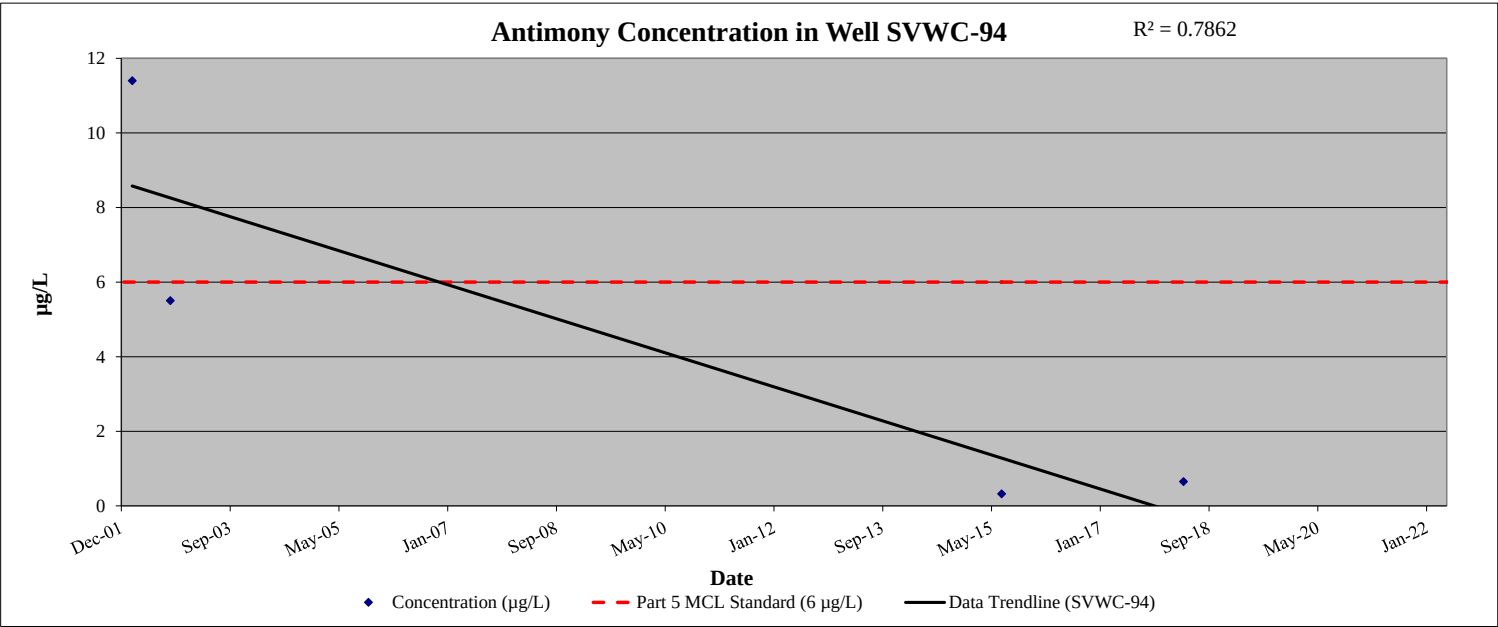


Table 11

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 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		
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		
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		
Jan-22	0.21 J	NA	0.84	NA	0.19 J	NA	0.73	NA	NA	NA	NA	0.16 U	NA	0.49 J	3.17	1.71	0.16 U	0.16 U	0.38 J	0.41 J	0.16 U	0.16 U	0.16 U	0.37 J	NA	0.2 U	0.2 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.

Table 11

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

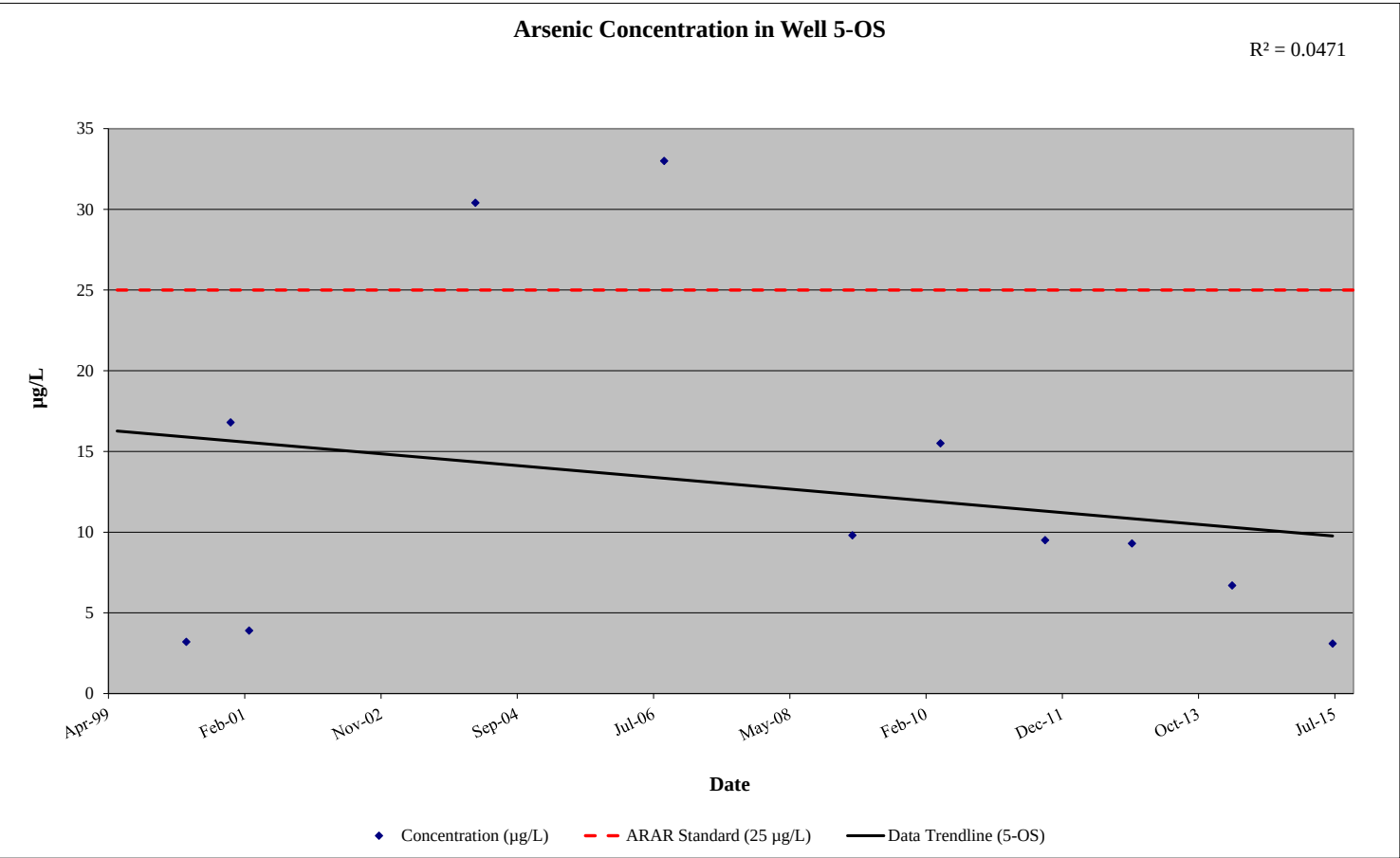
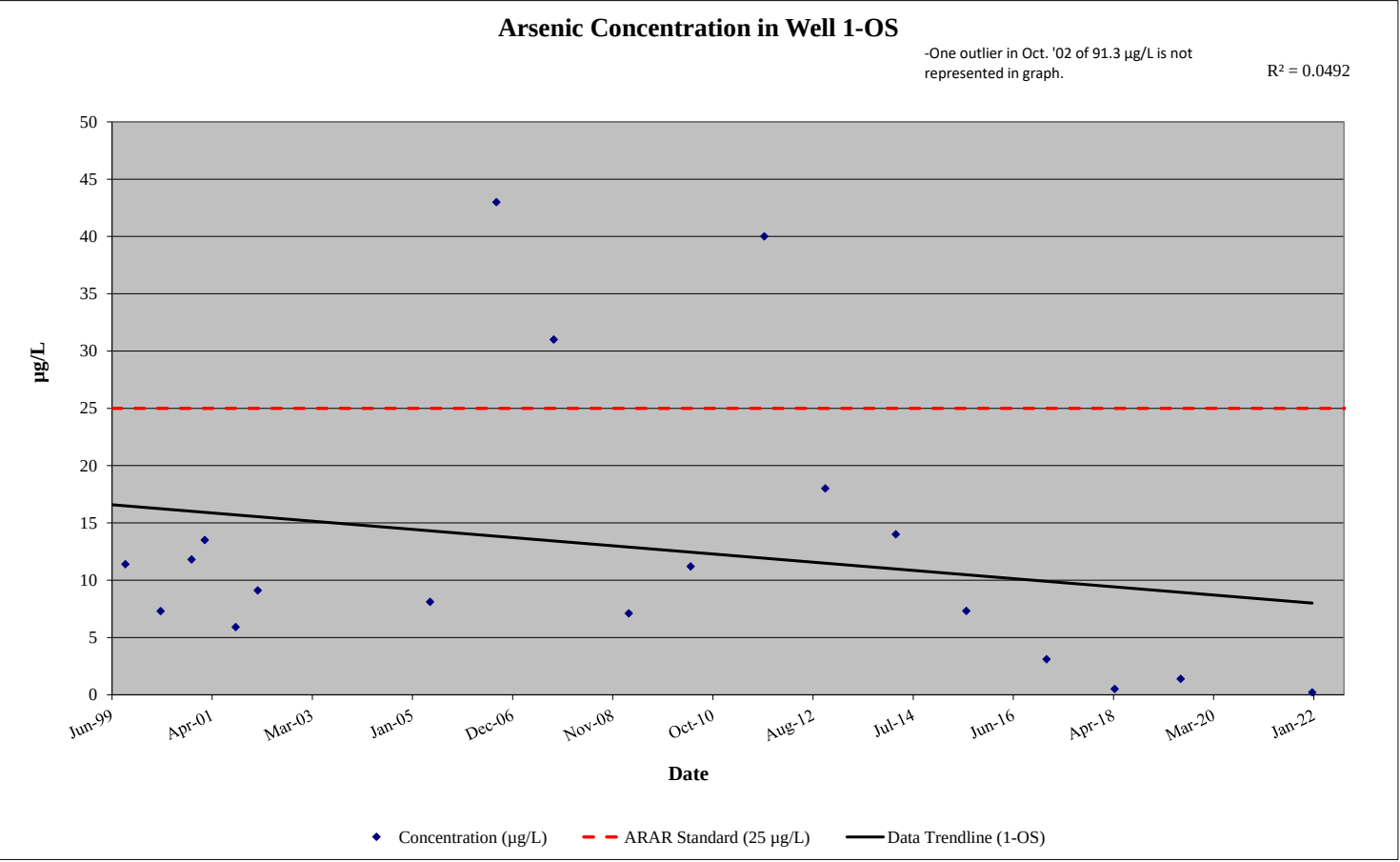


Table 12

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	< 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	
Jan-22	54.43	NA	33.5	NA	154.1	NA	999.2	NA	NA	NA	NA	4.41	NA	362.4	3.17	16.92	15.94	12.18	1.55	1.57	0.48 J	7.95	1.43	4.28	NA	0.3 J	0.2 U	0.52 J	0.17 U	0.20 J	0.17 U	

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).
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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 12

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

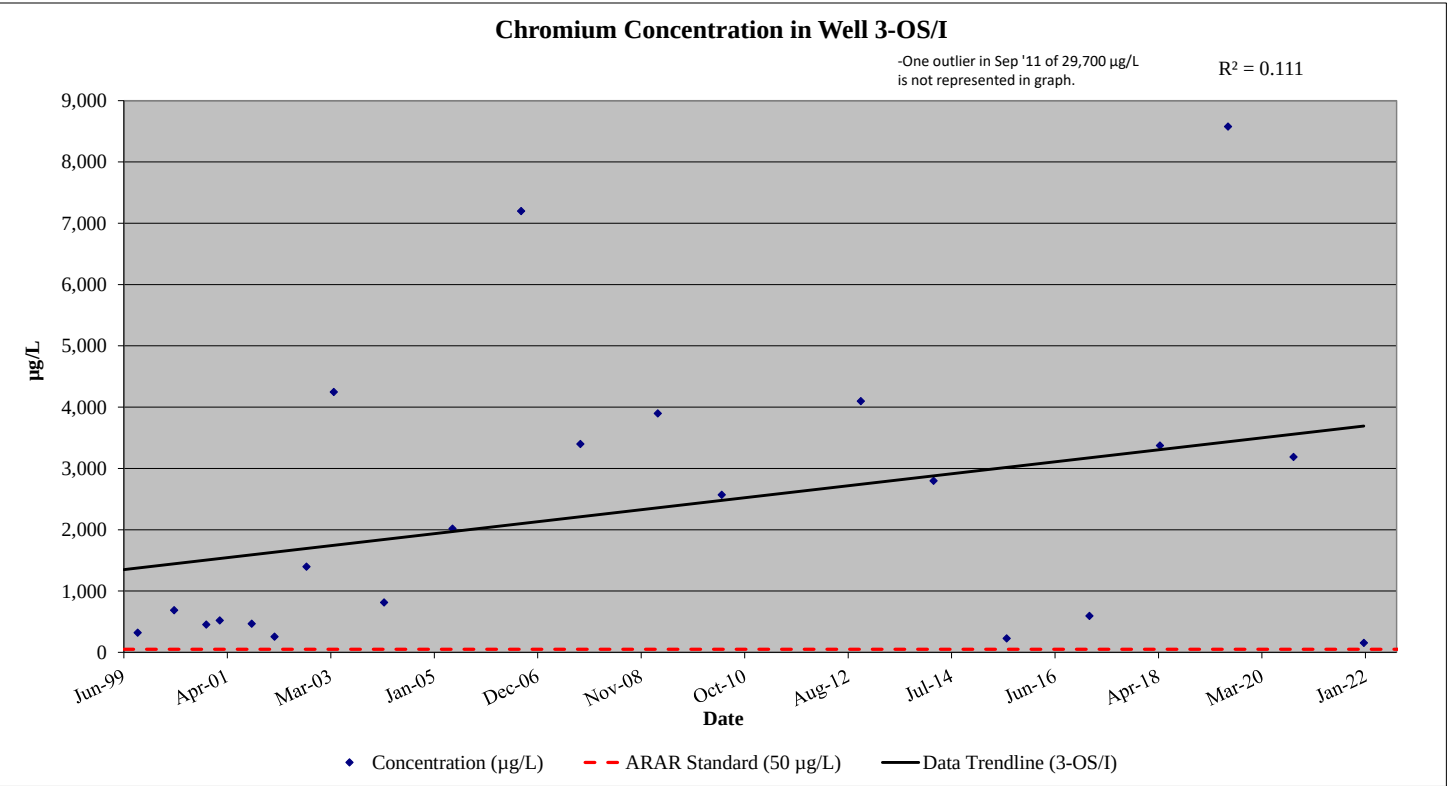
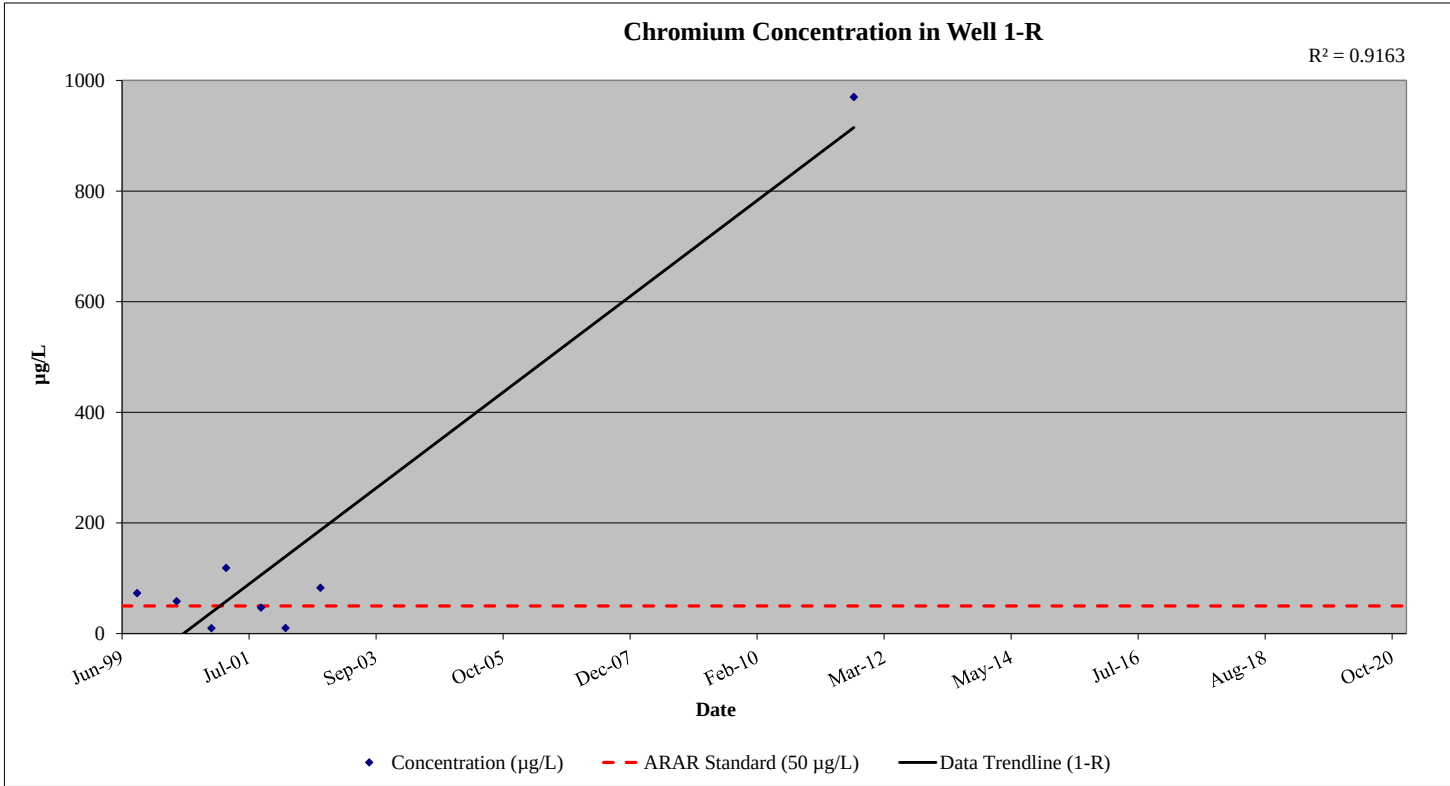
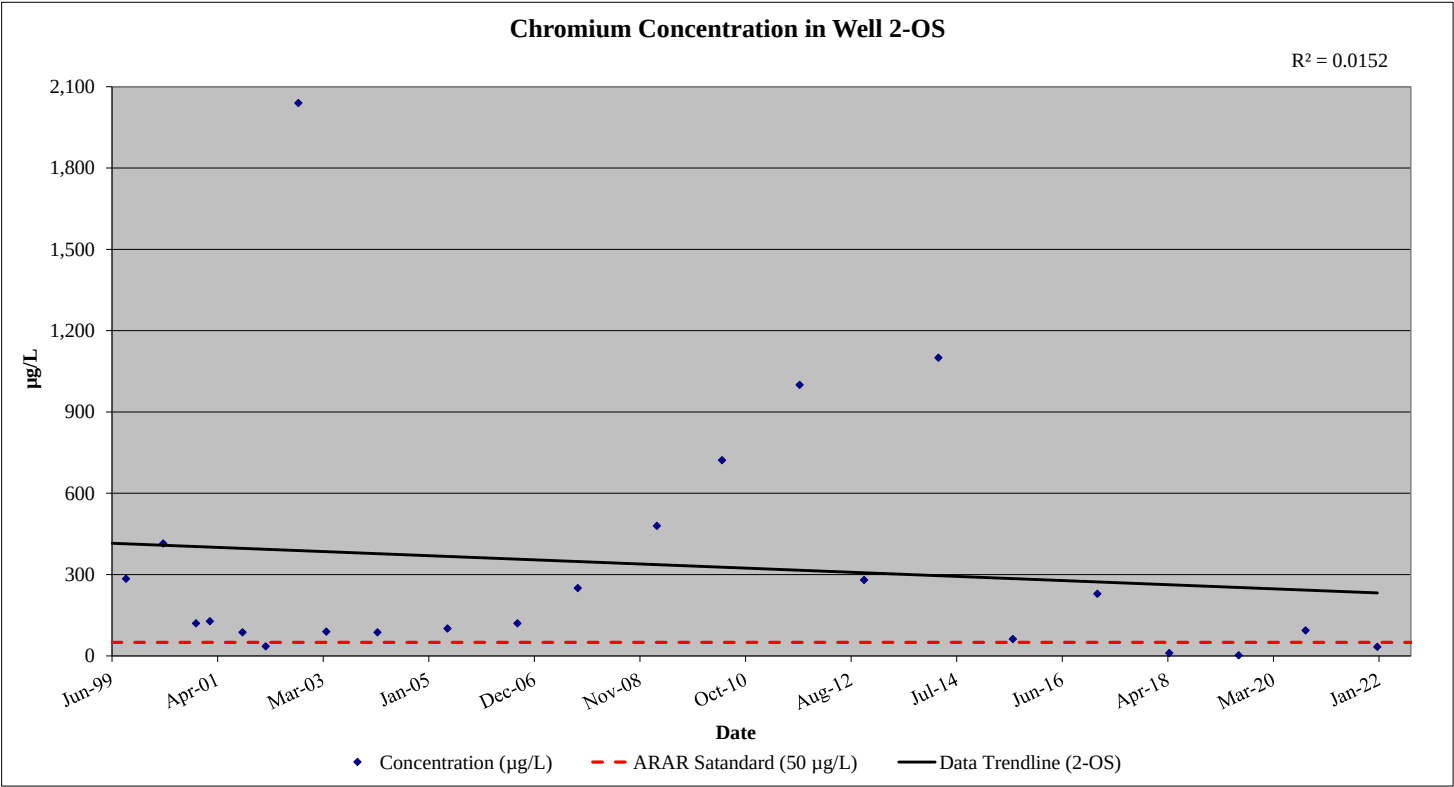
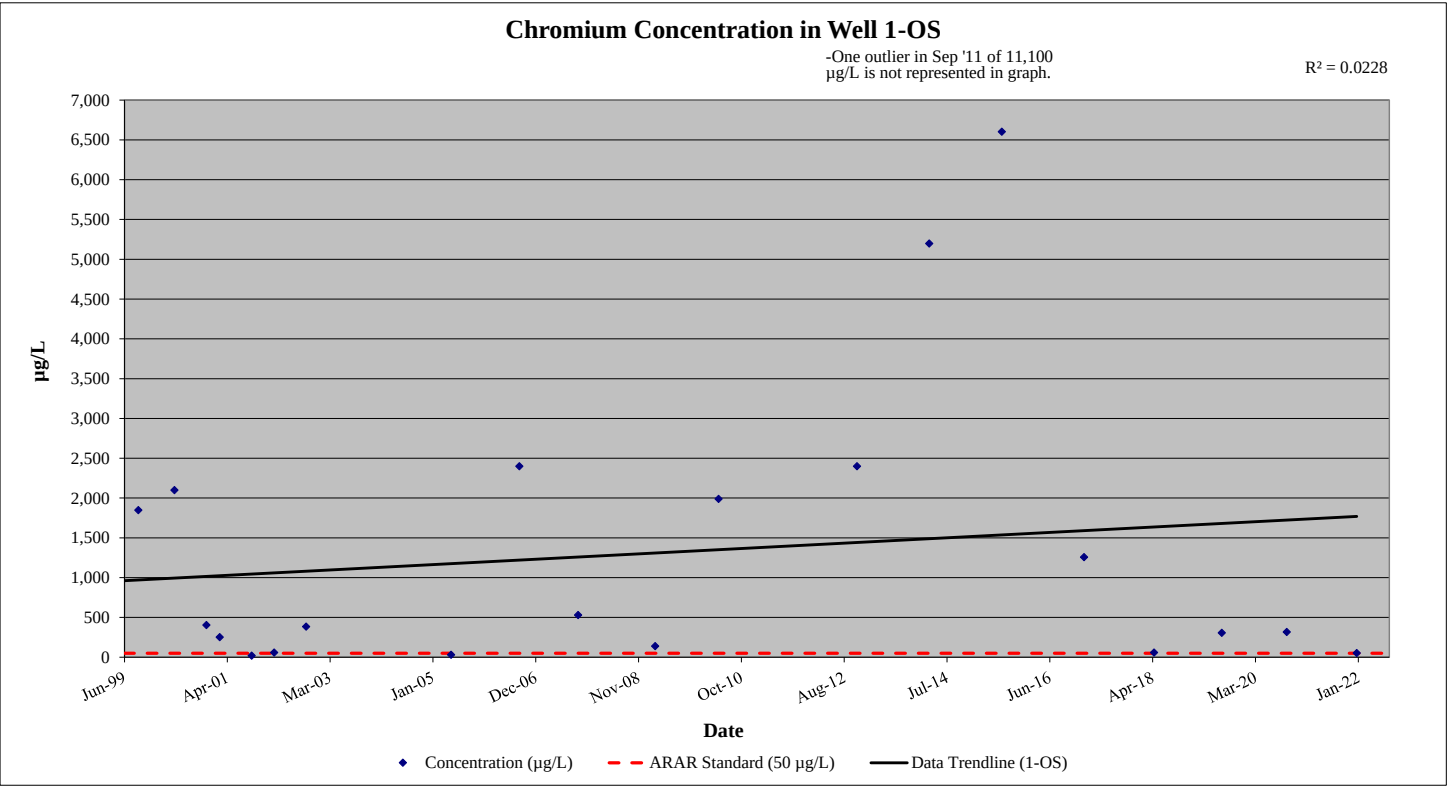


Table 12

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

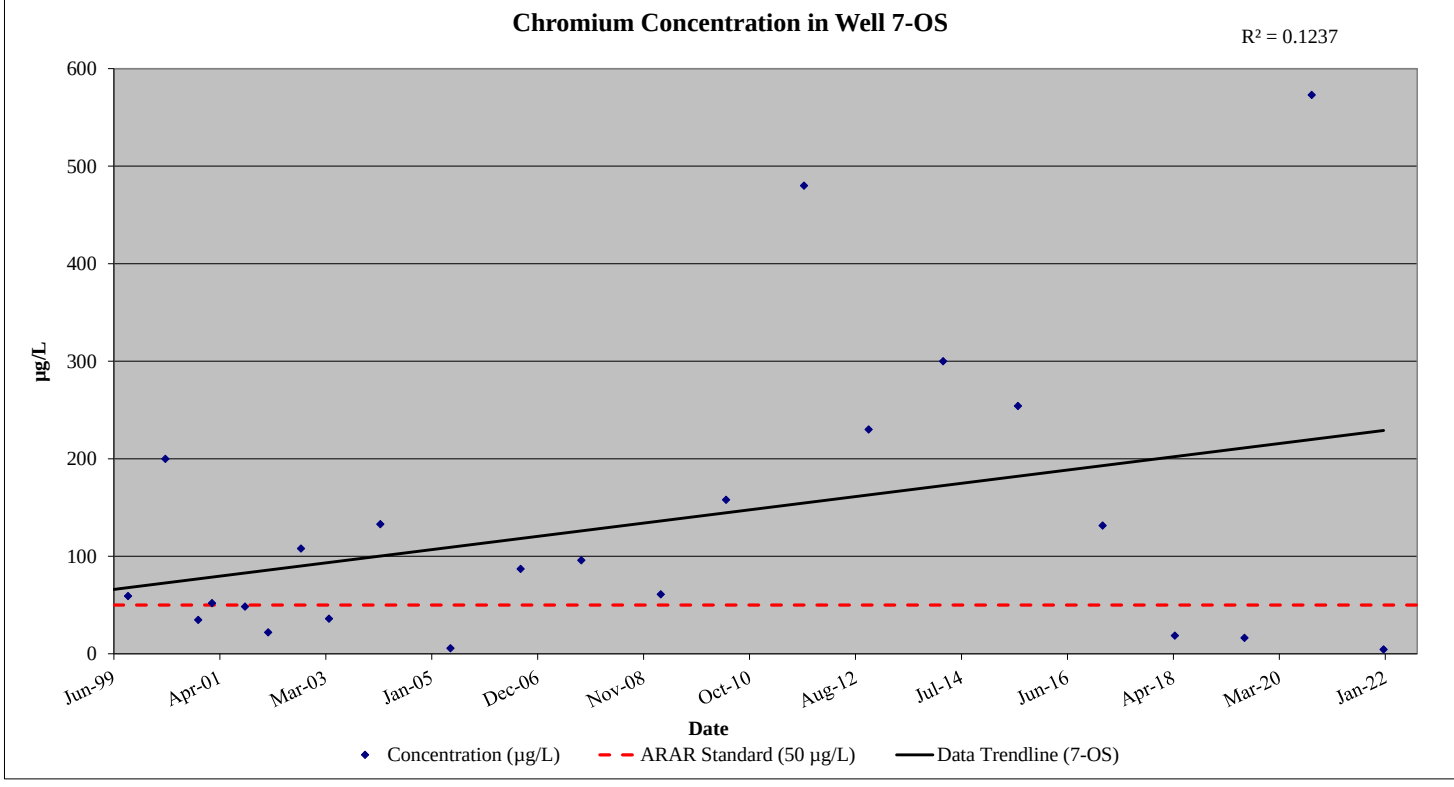
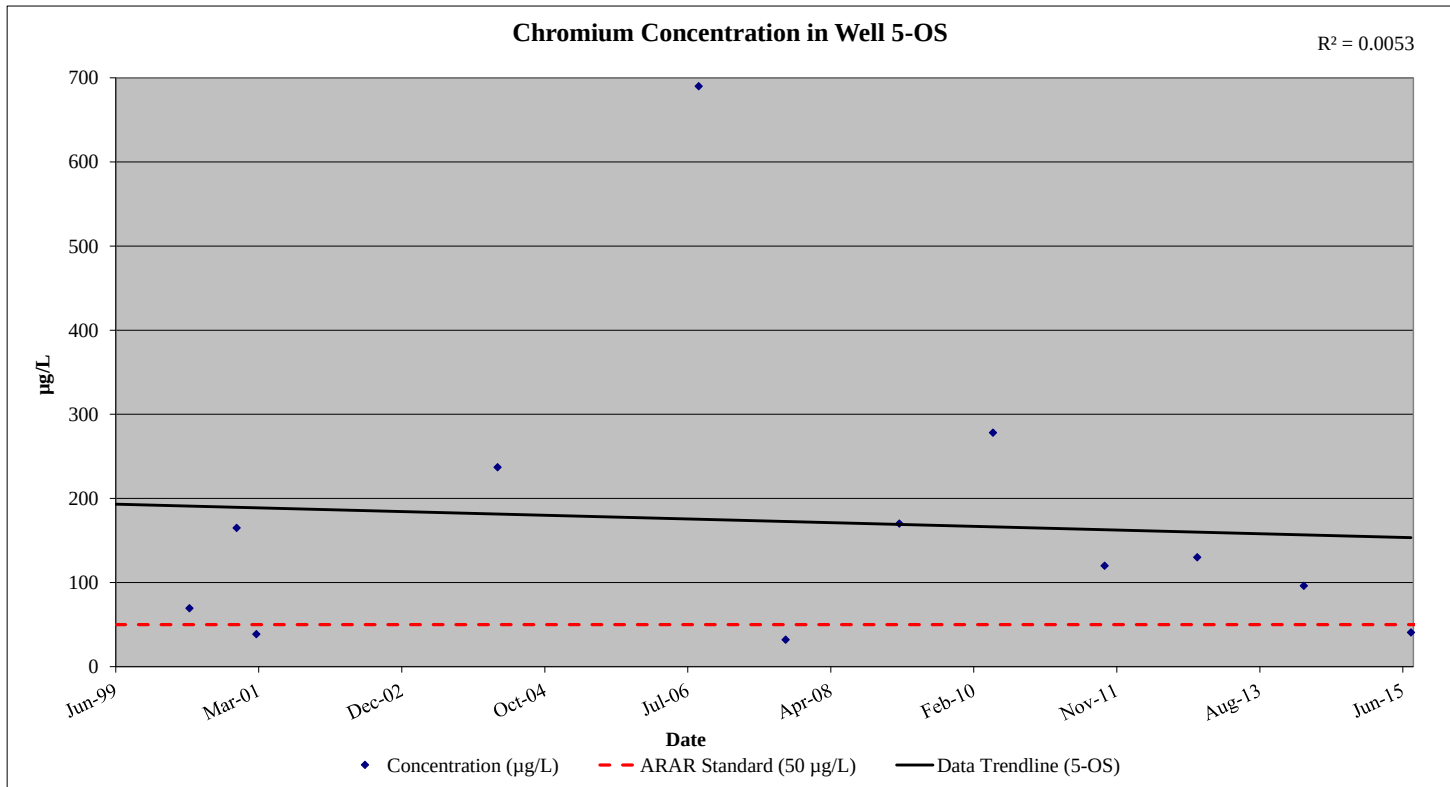
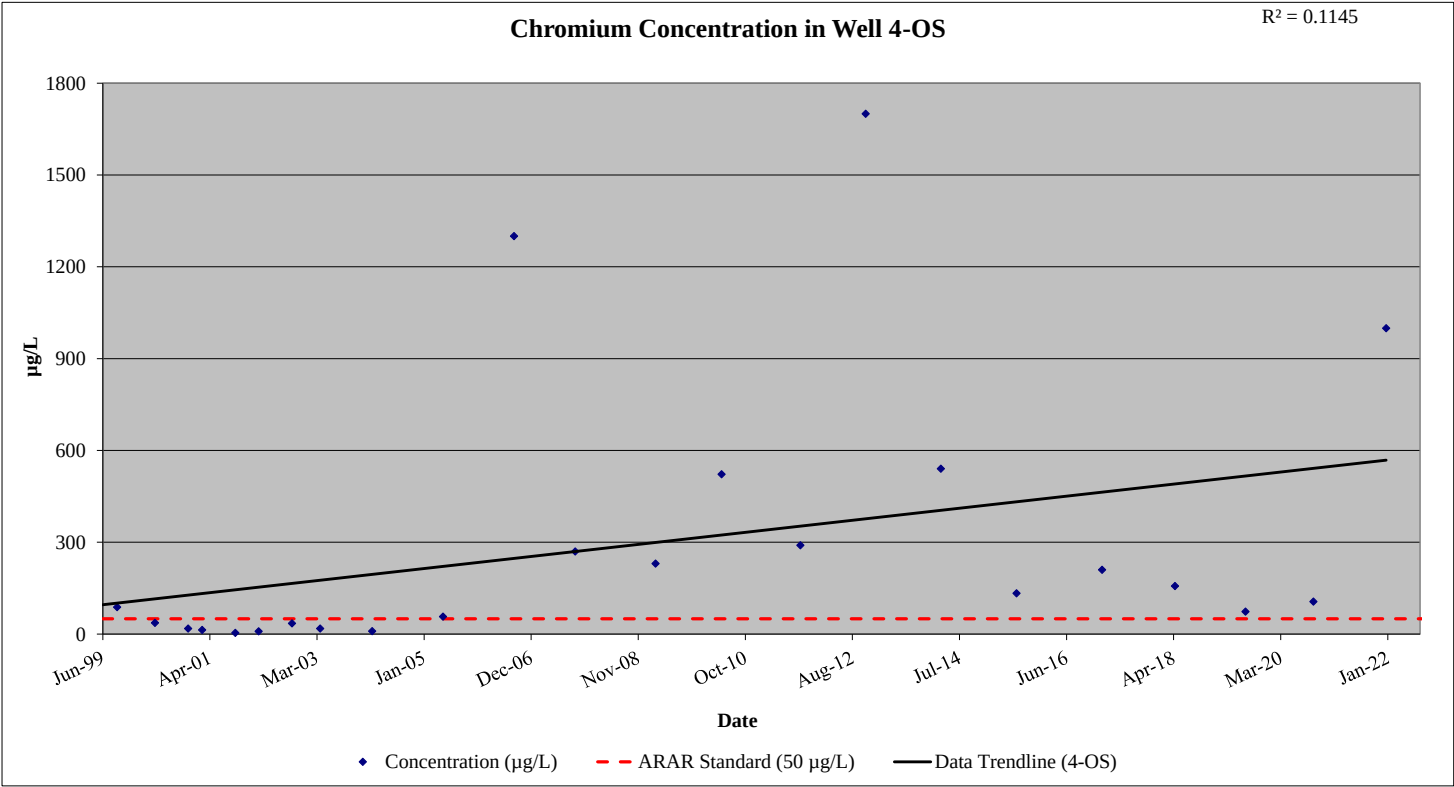
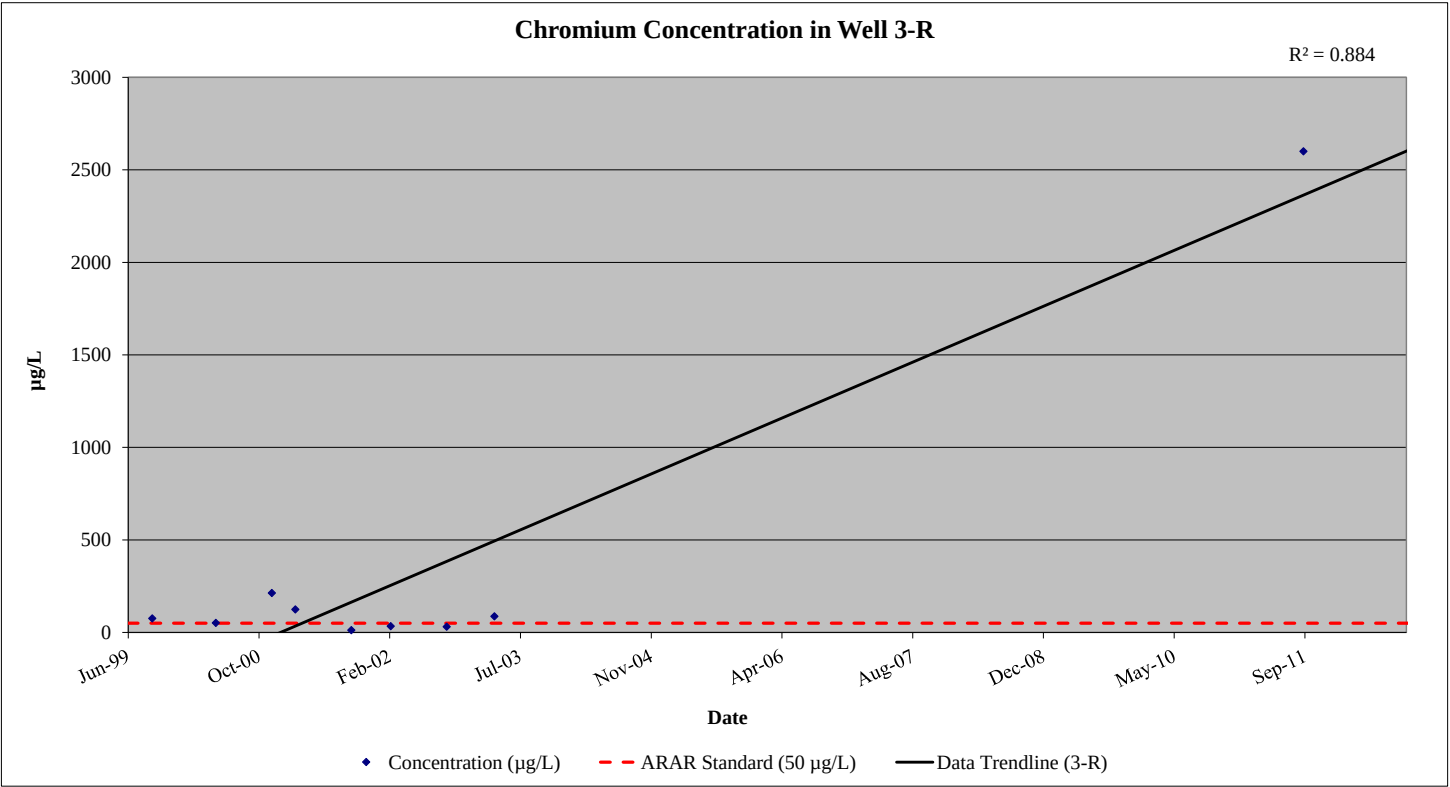


Table 12

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

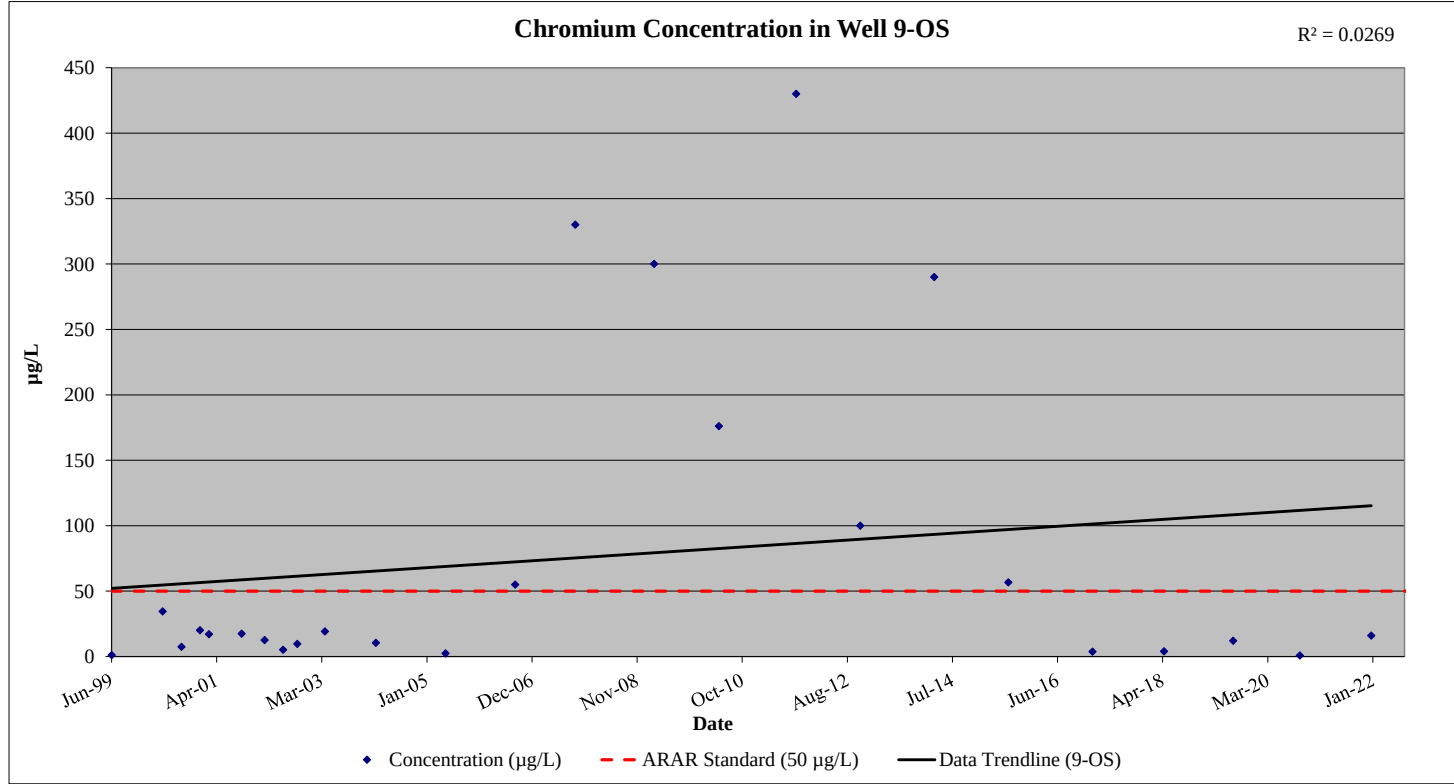
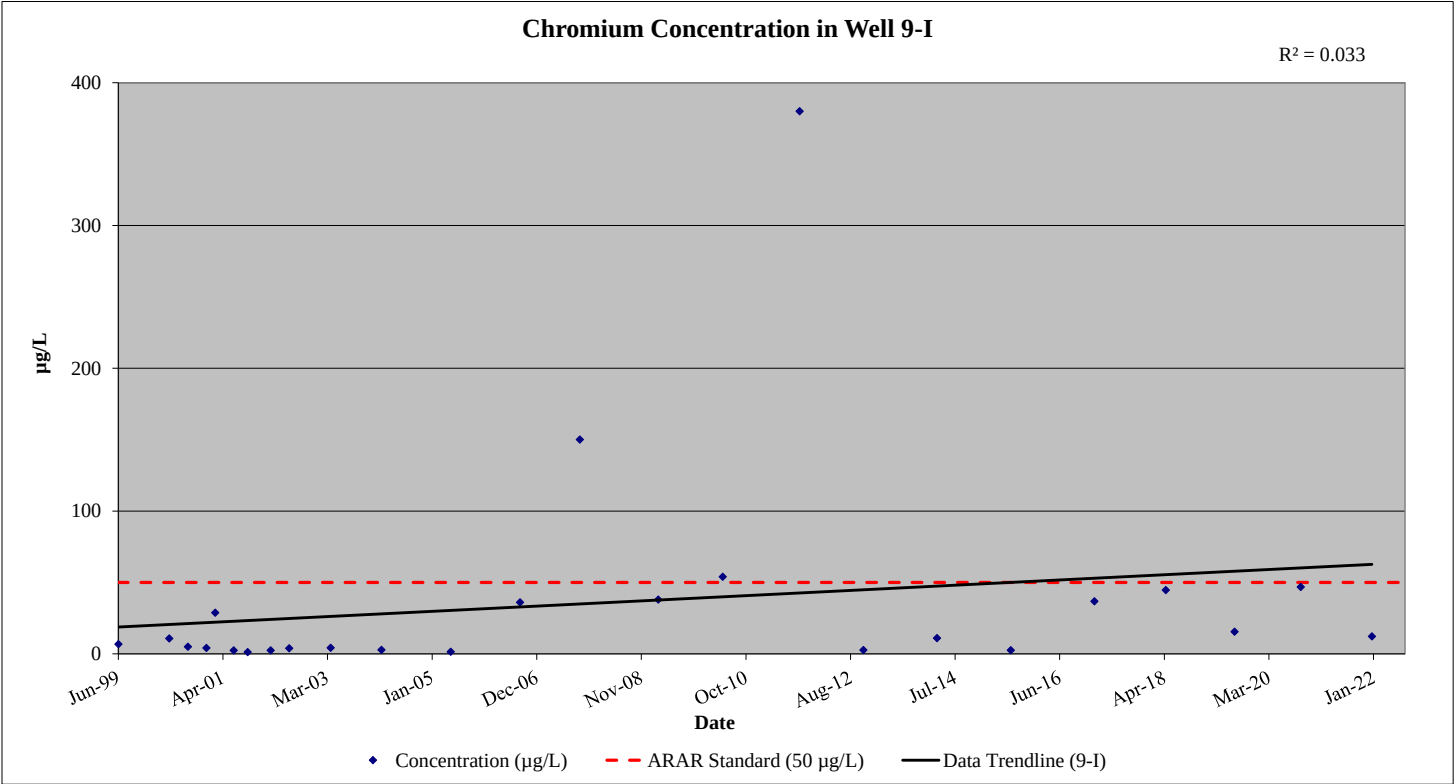
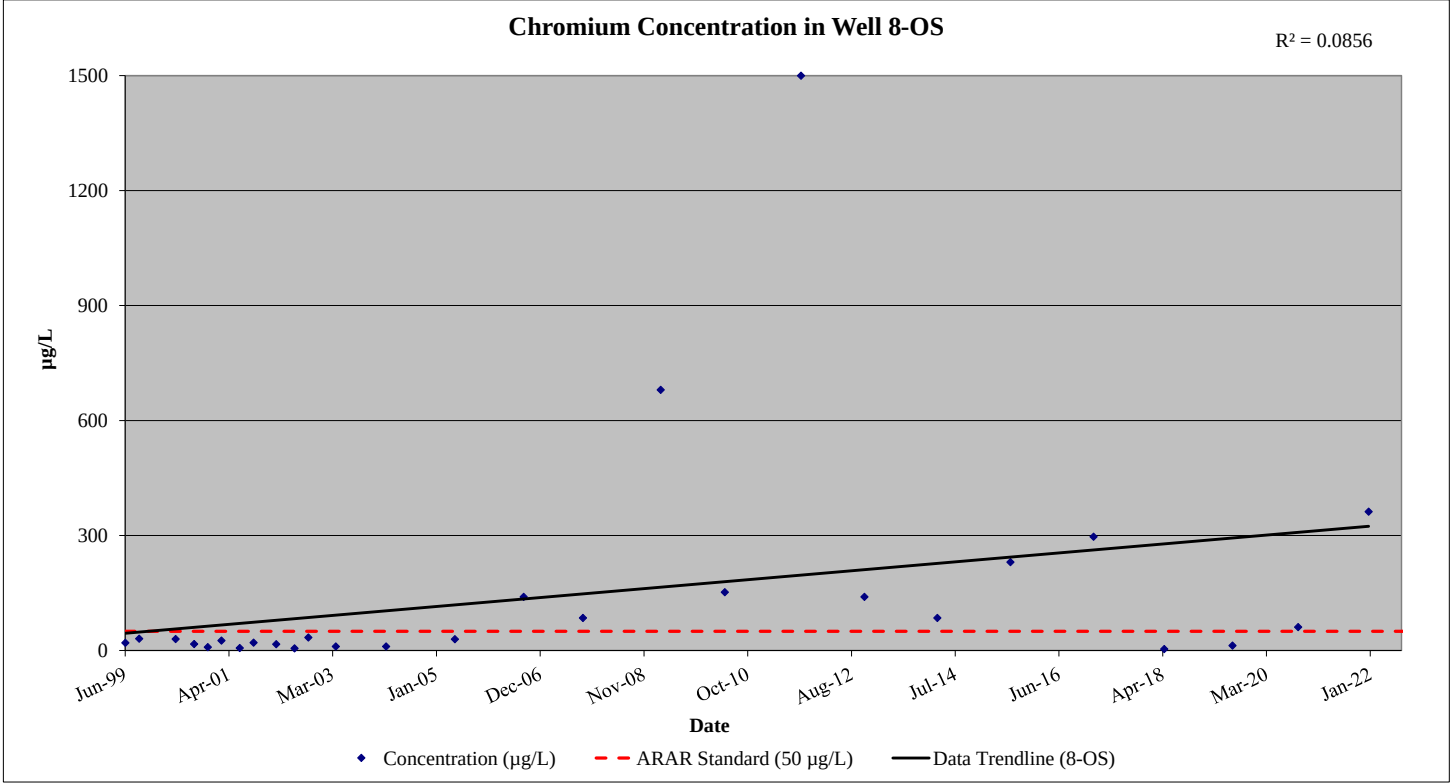


Table 13

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
Jan-22	450	NA	849	NA	1,210	NA	6,580	NA	NA	NA	NA	45 J	NA	2,190	7,520	2,460	102	229	569	1,960	27 J	70	167	233	NA	10 J	104	19.1 U	19.1 U	19.1 U	19.1 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.

Table 13

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

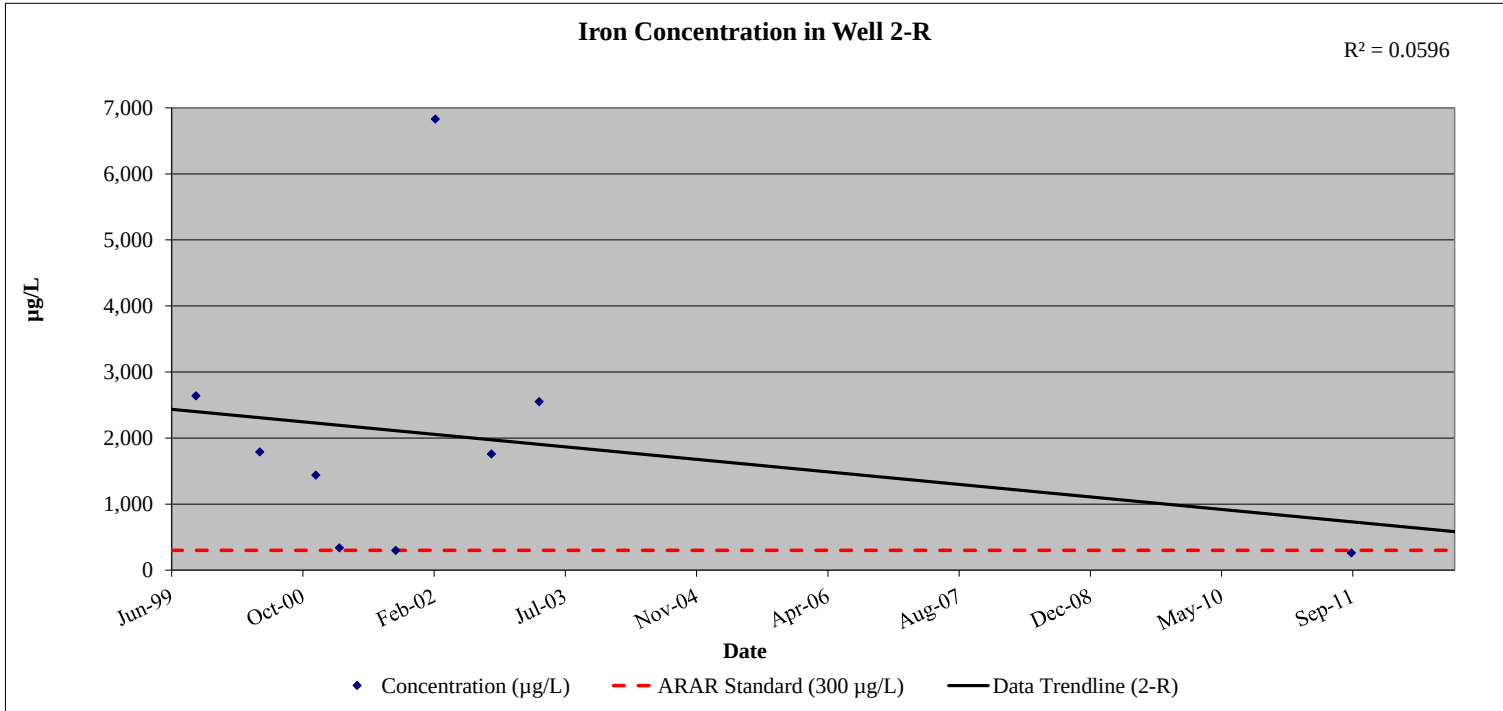
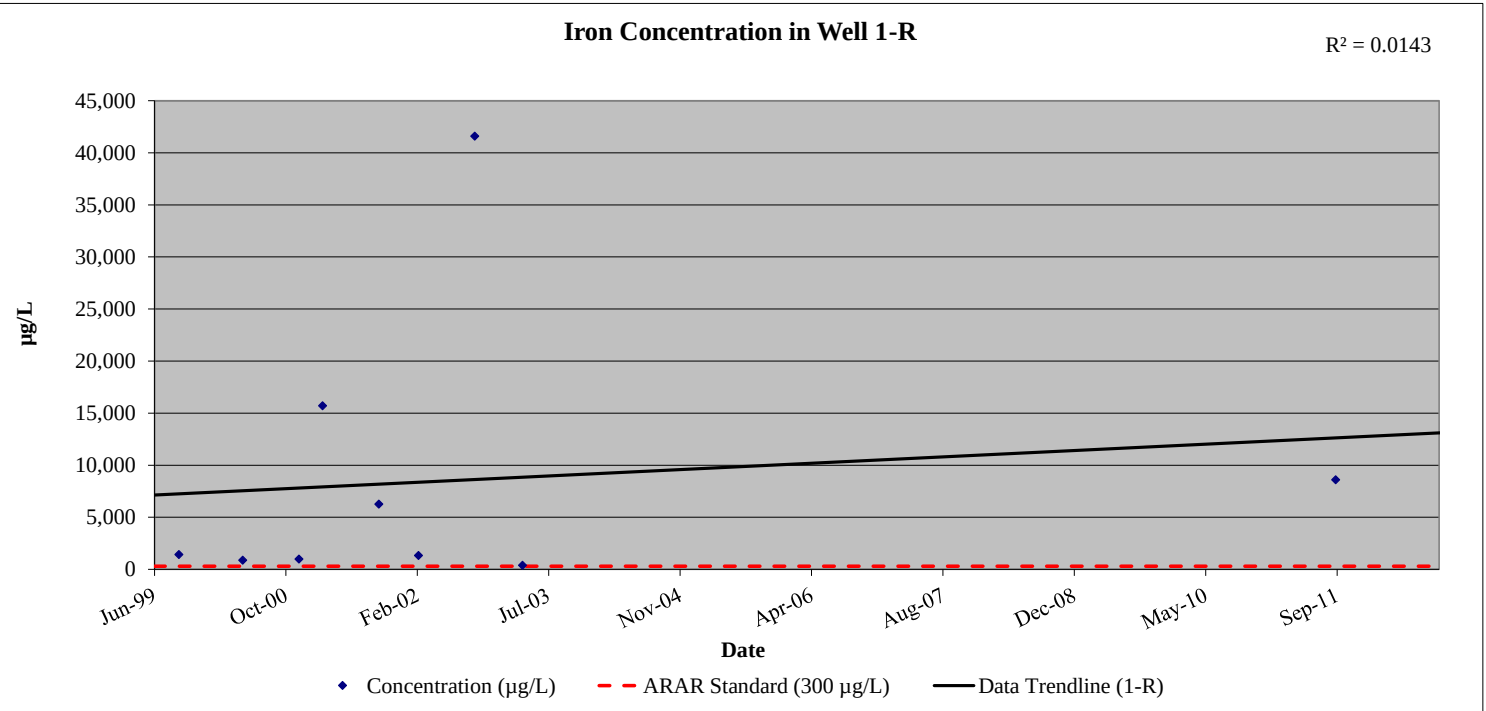
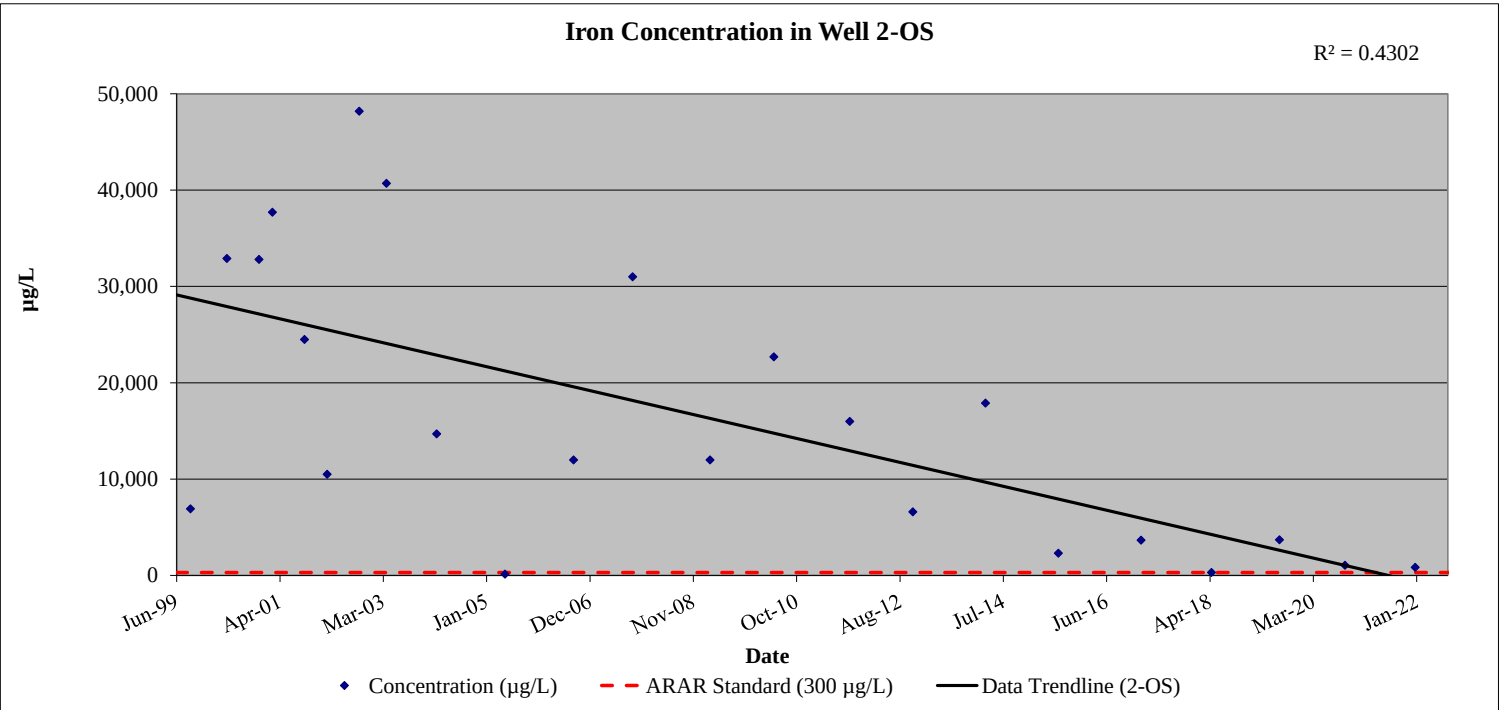
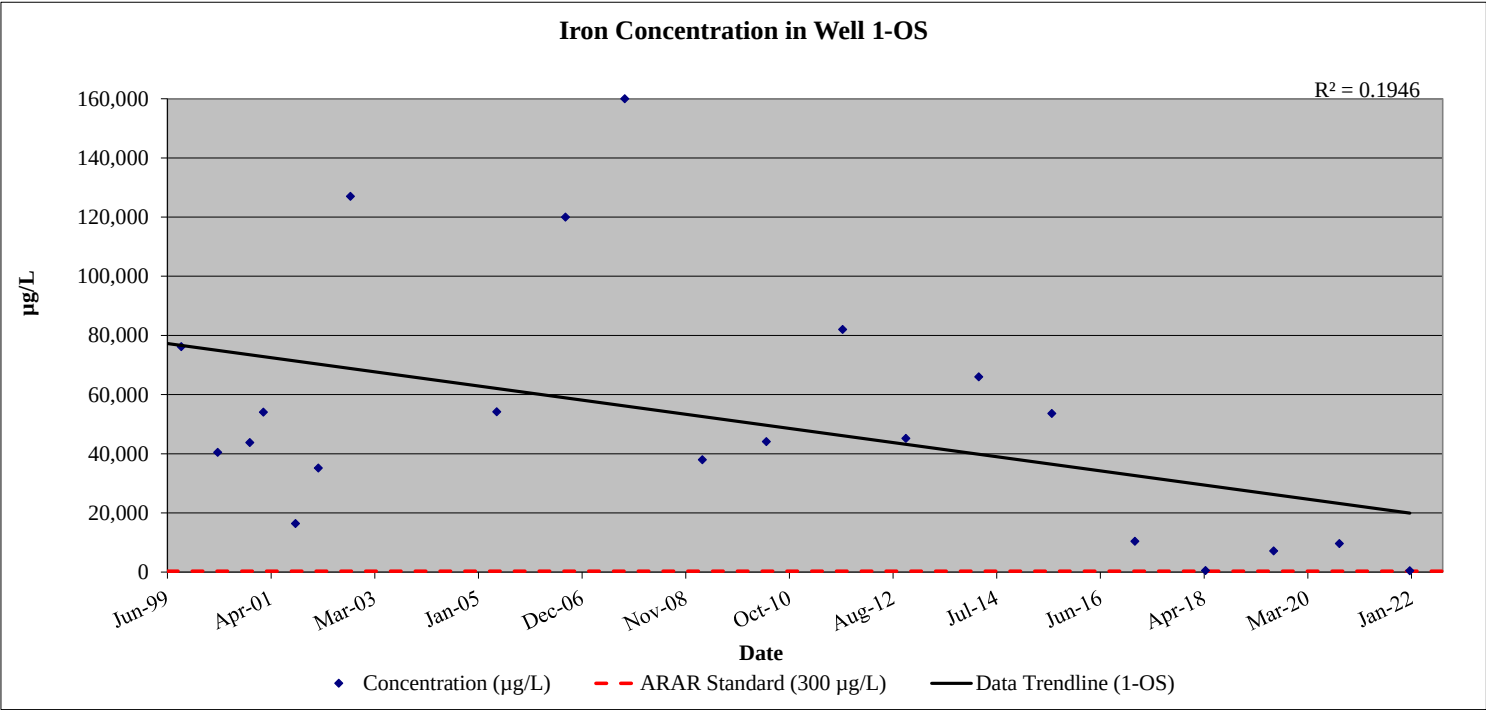


Table 13

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

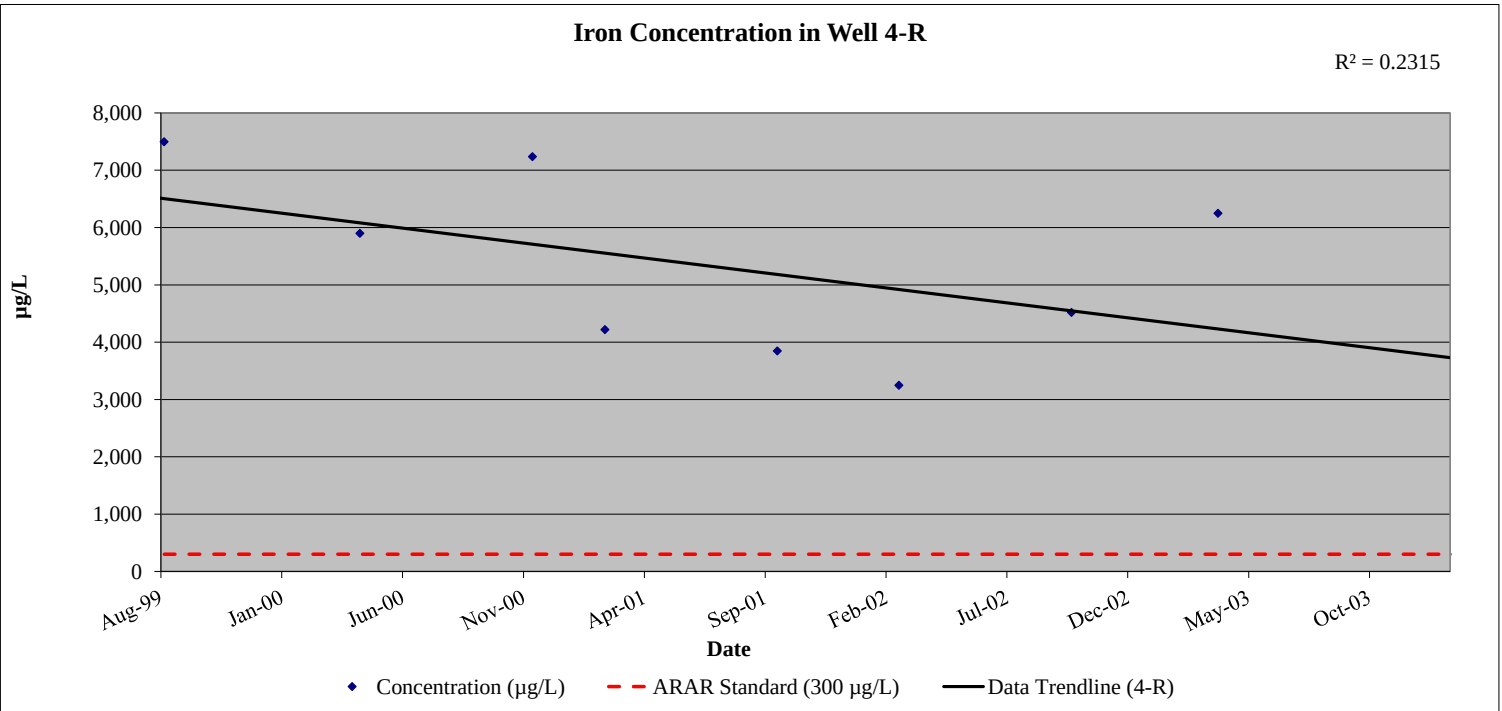
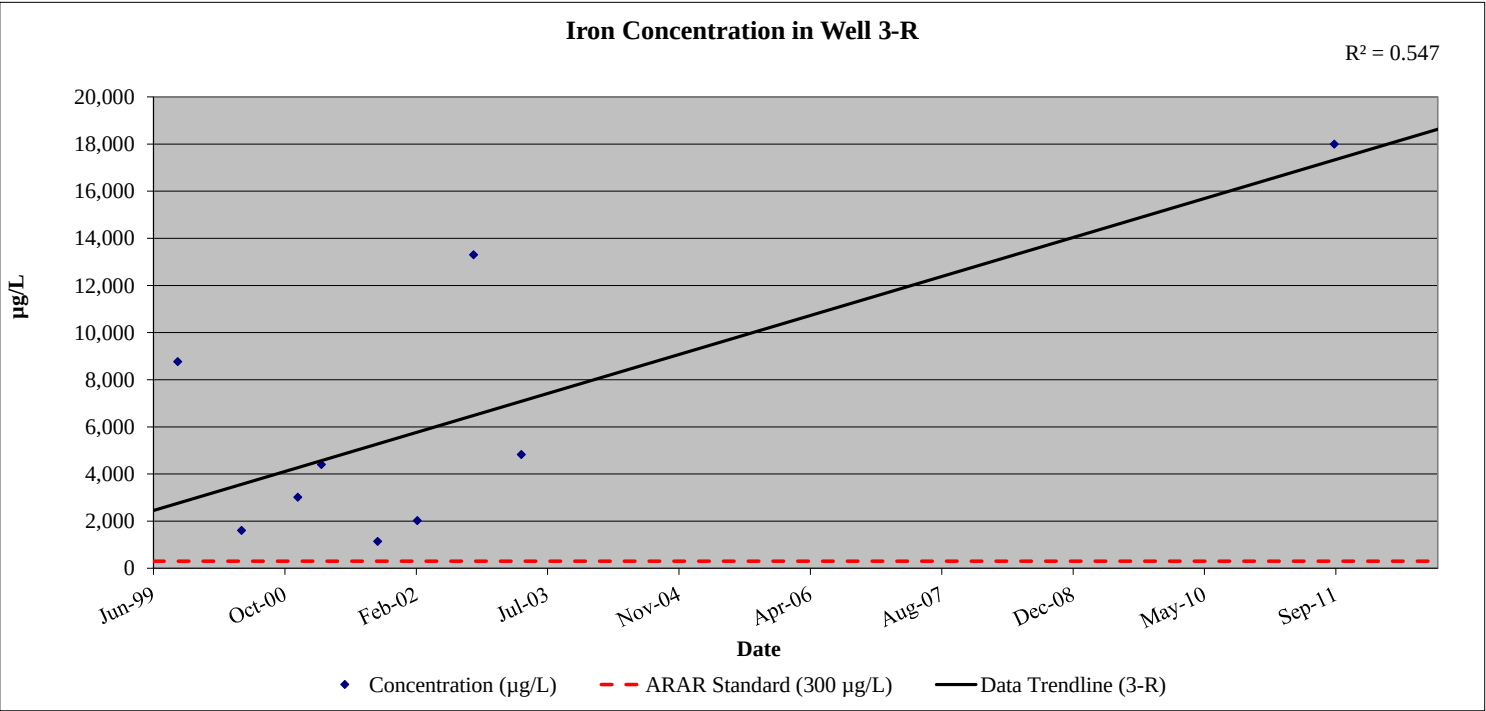
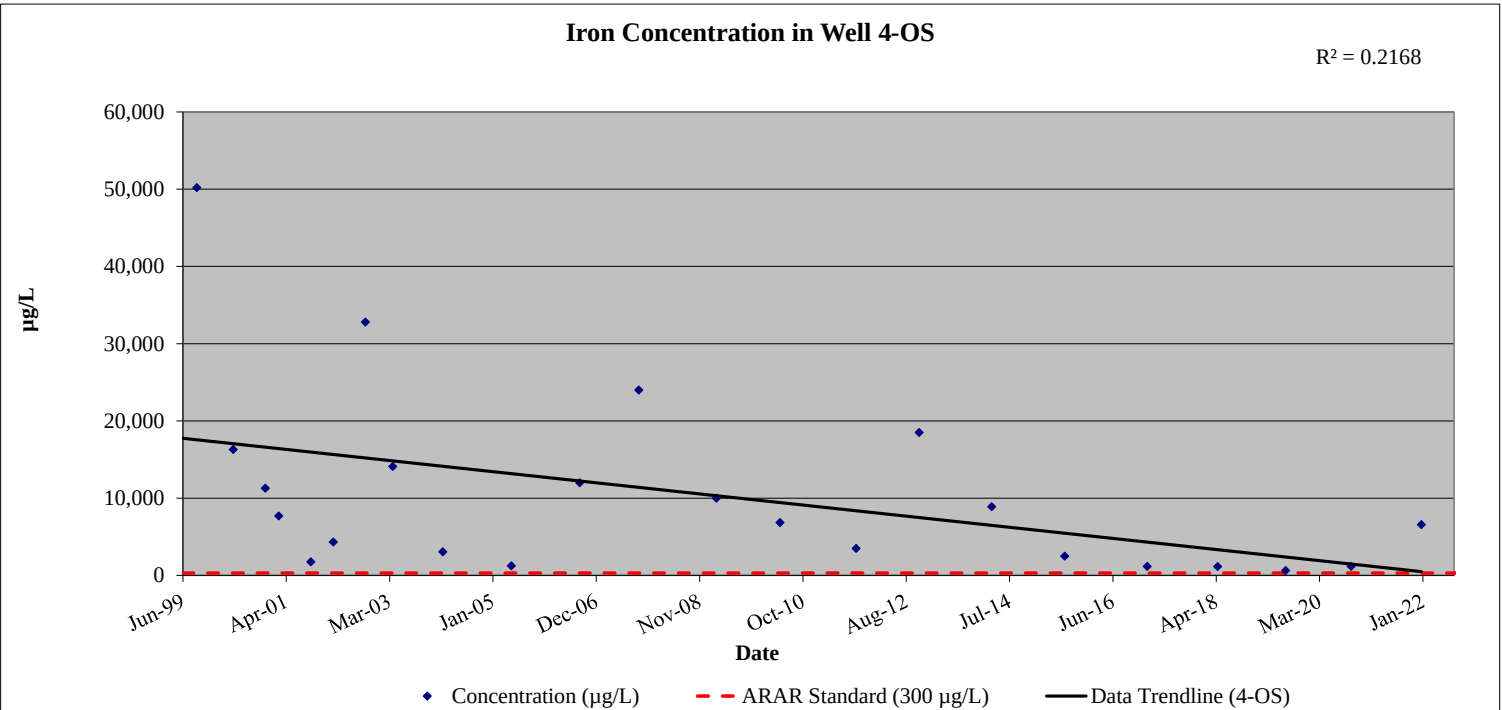
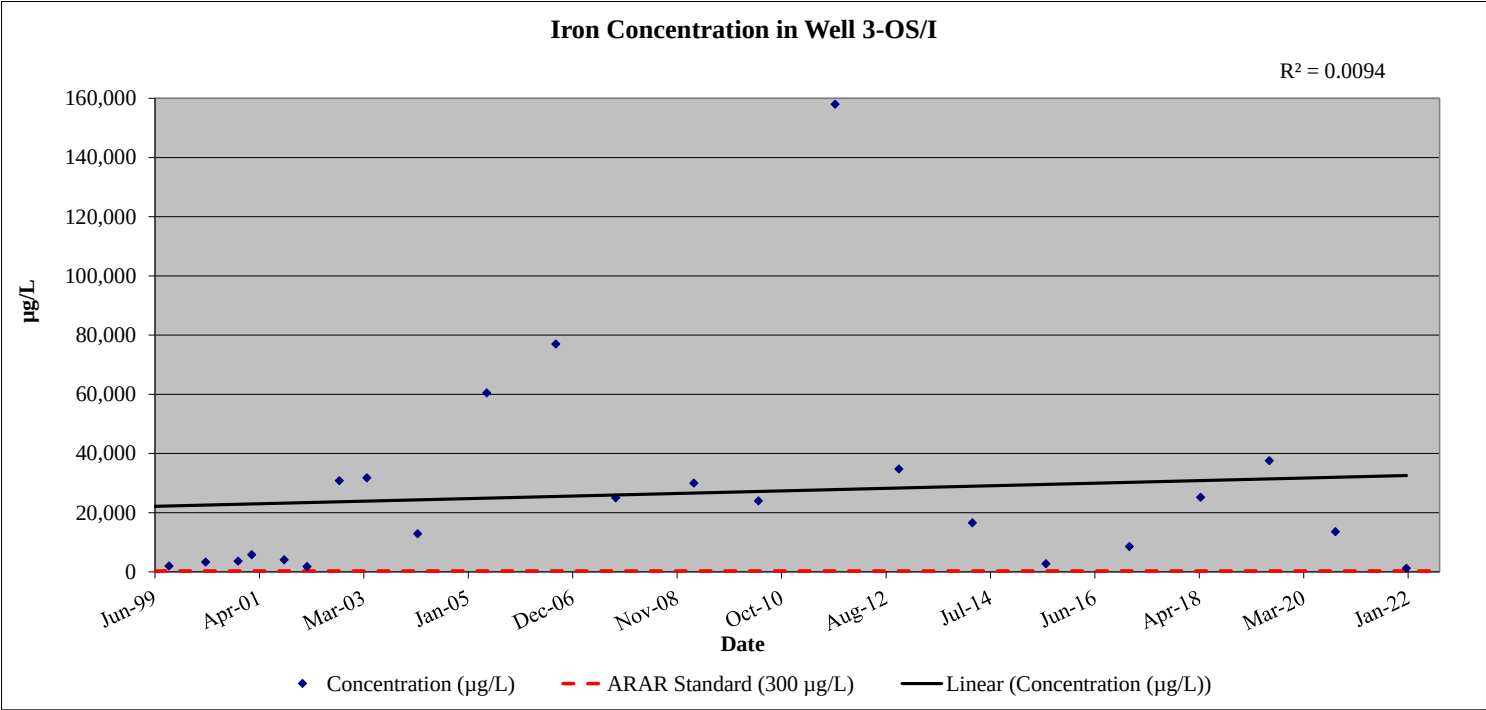


Table 13

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

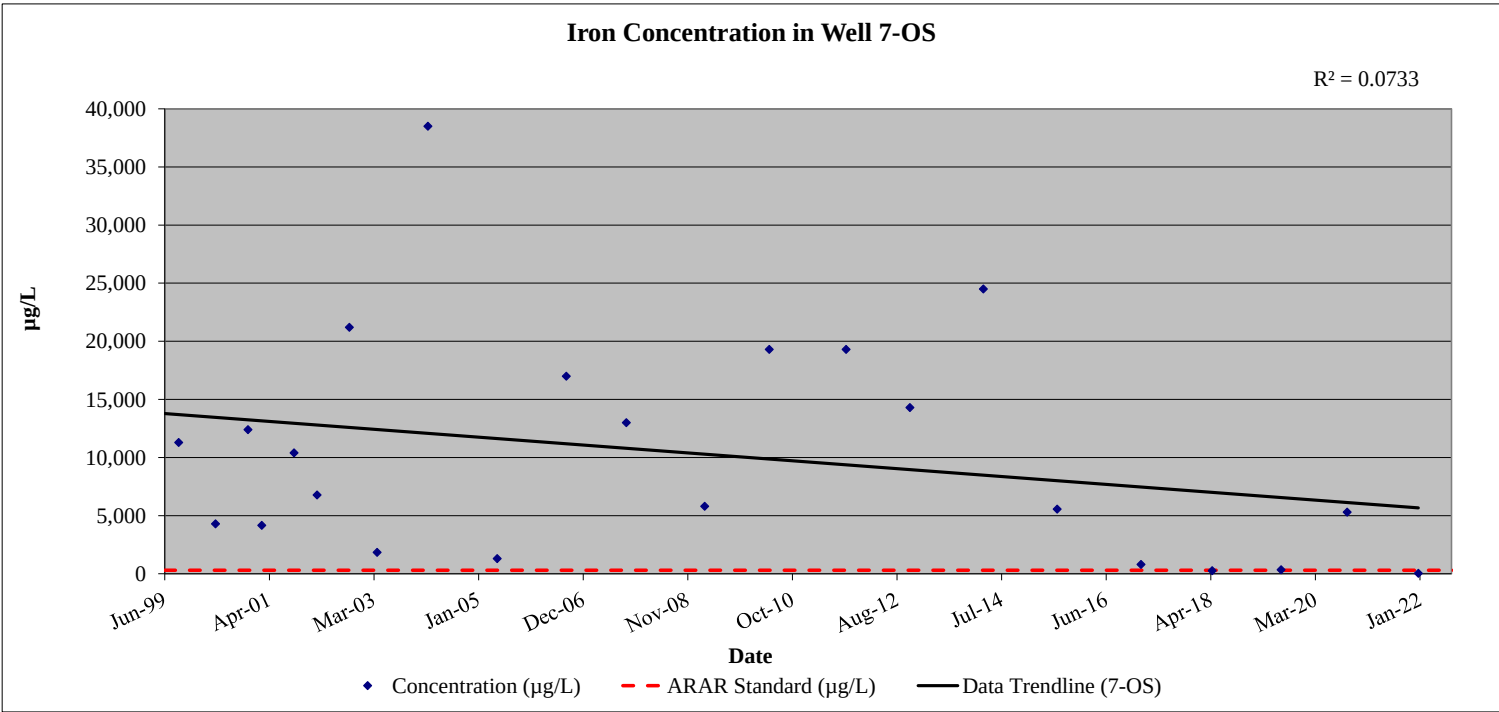
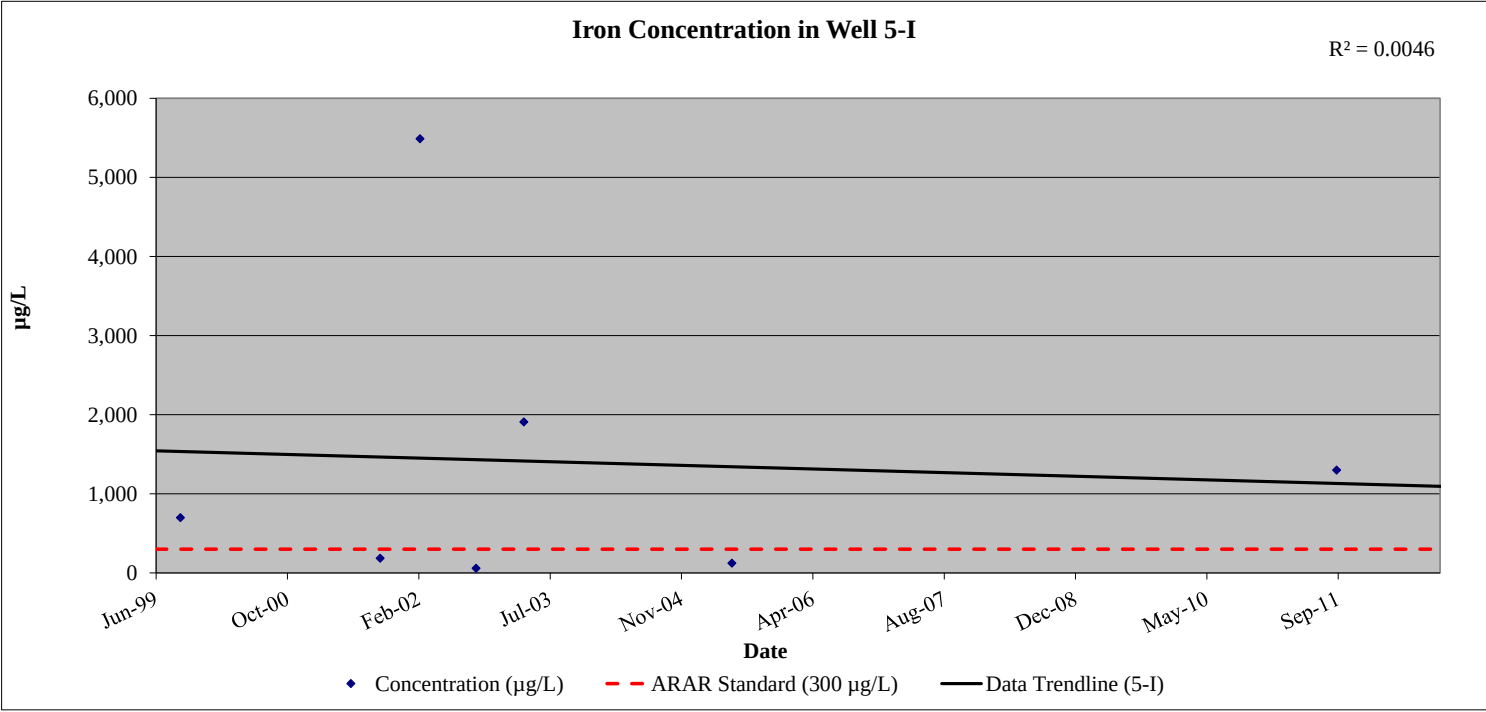
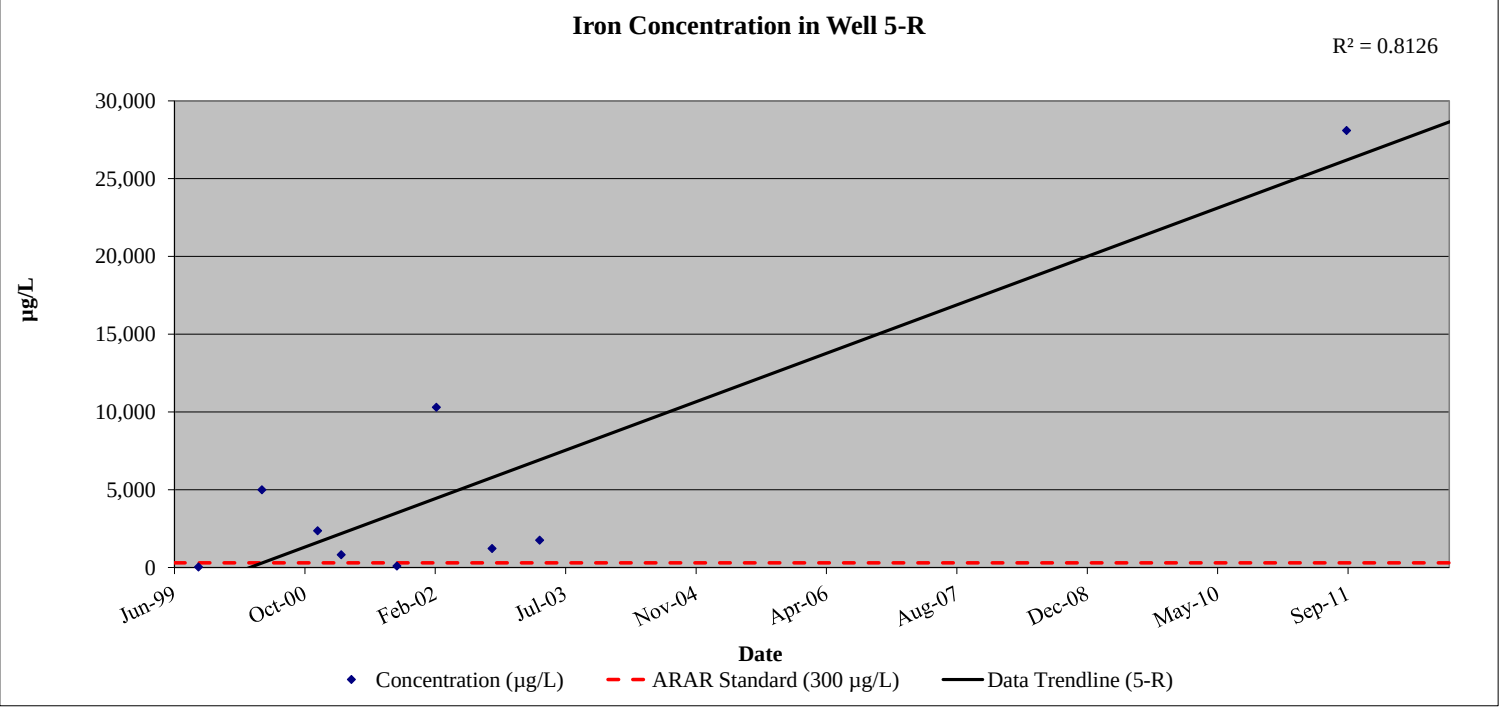
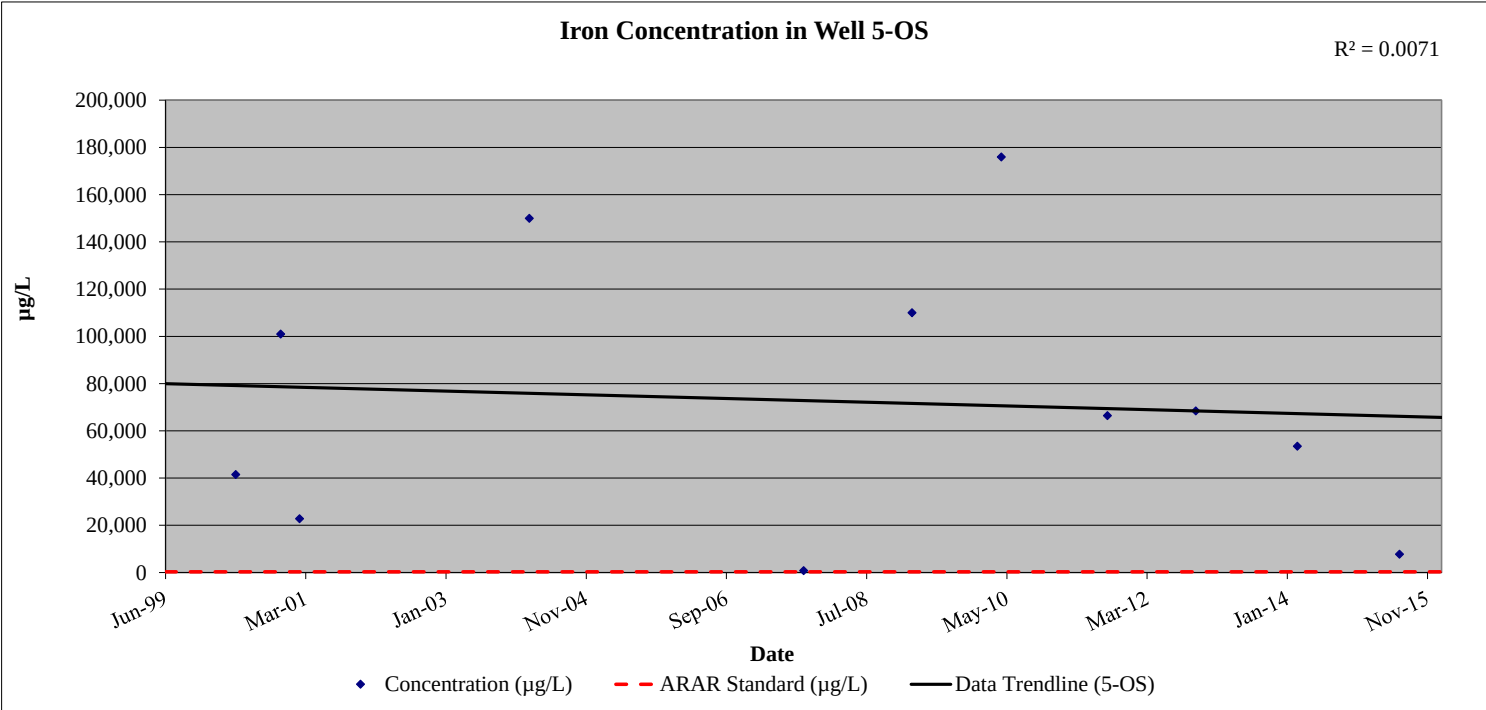


Table 13

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

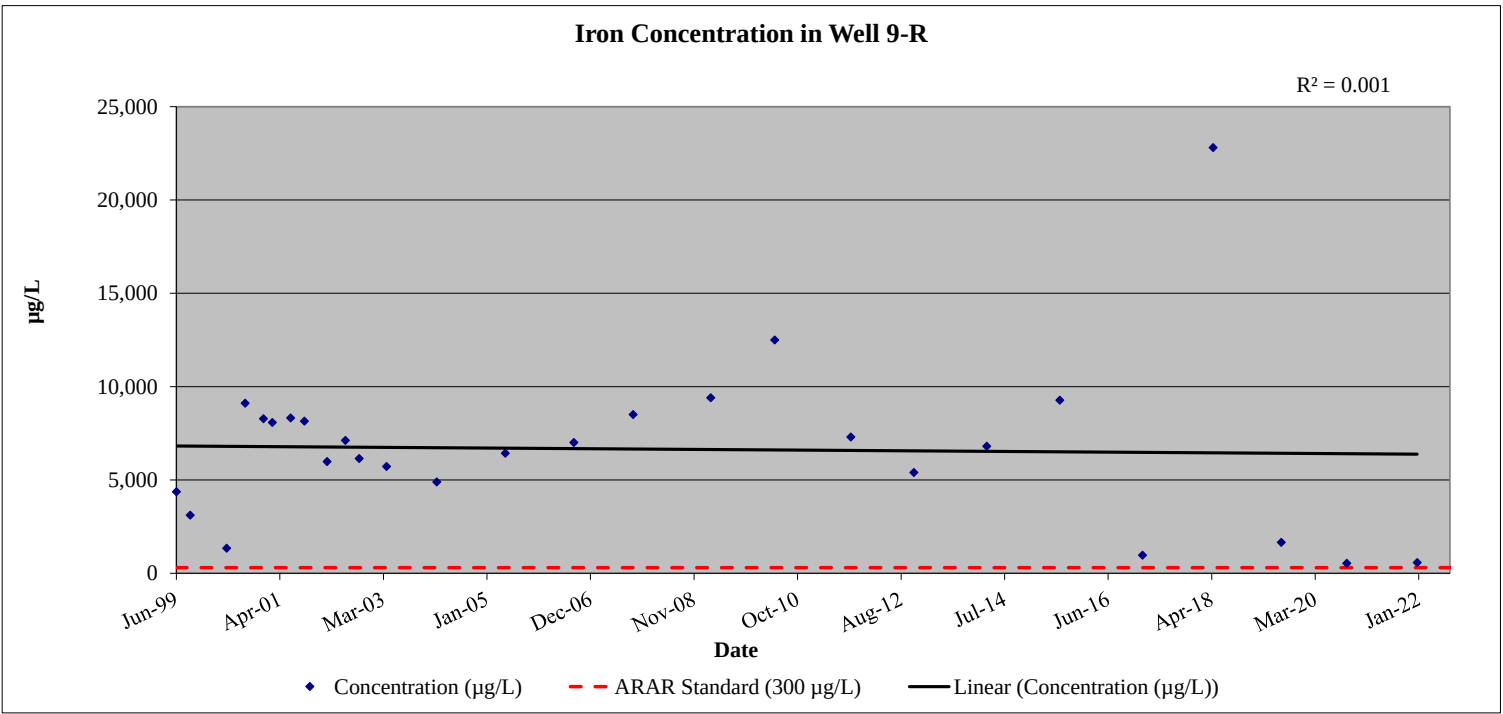
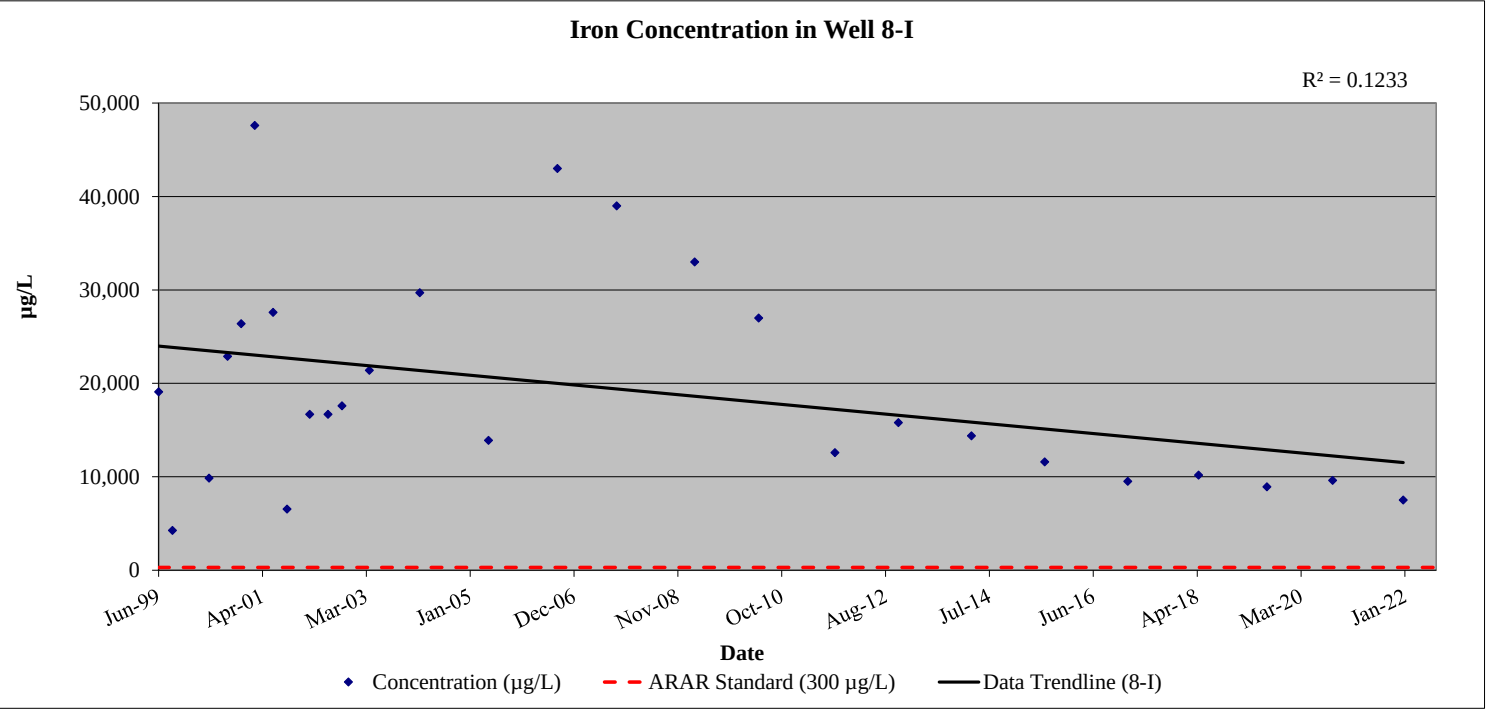
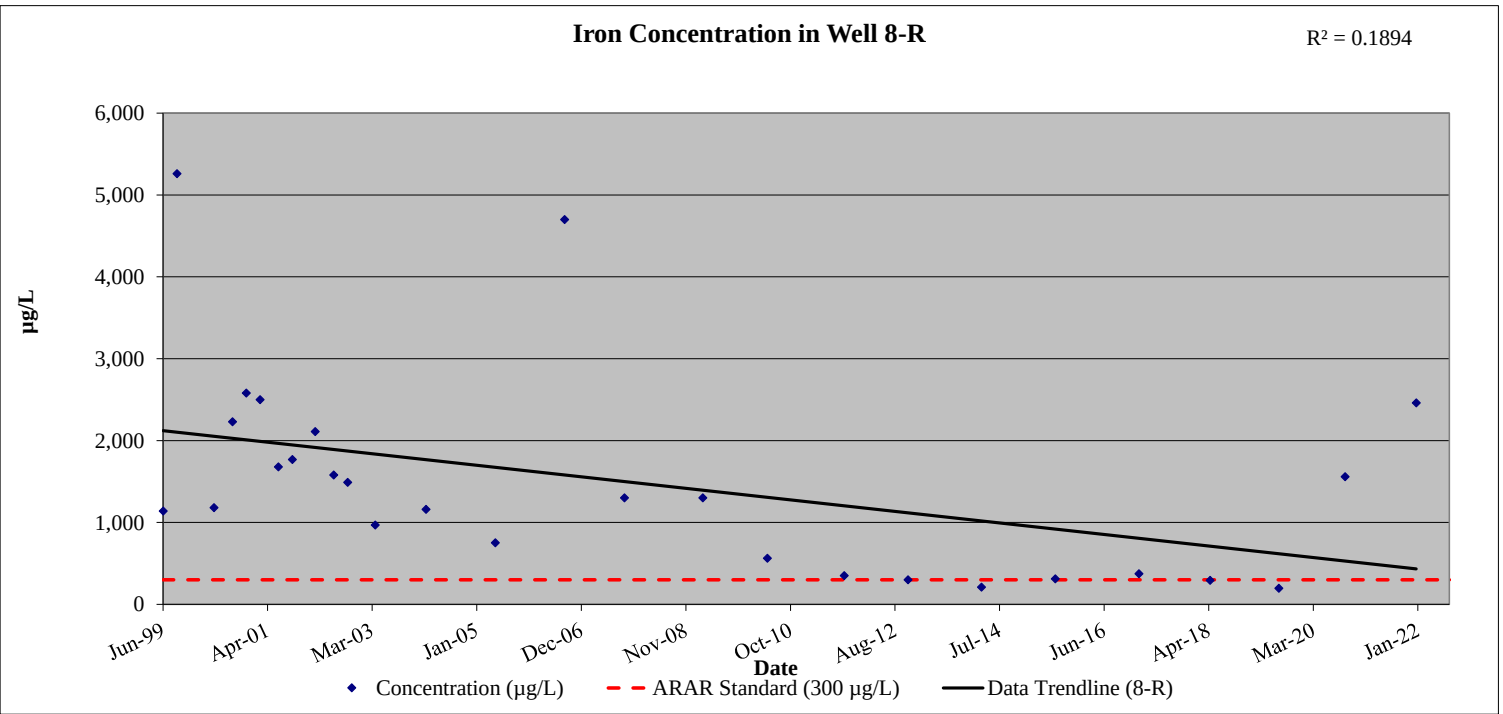
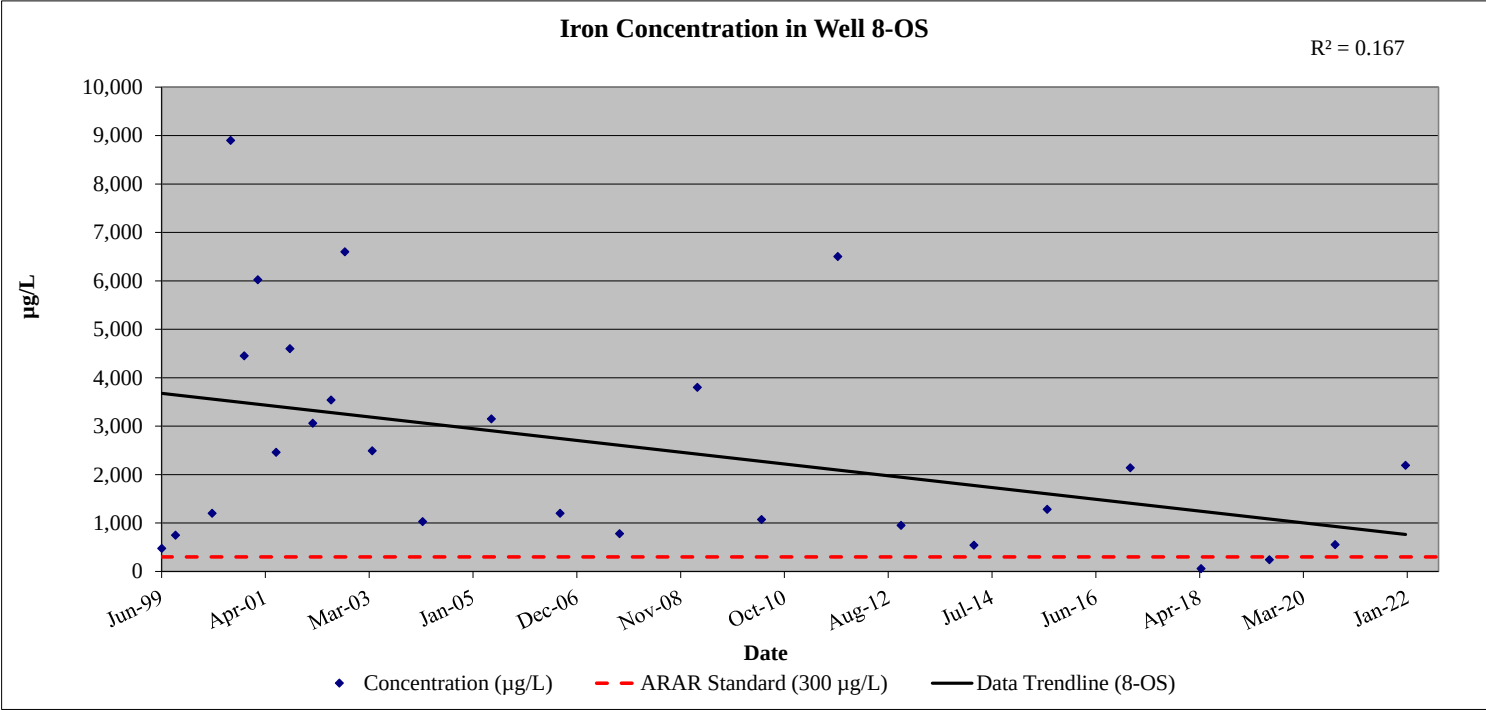


Table 13

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

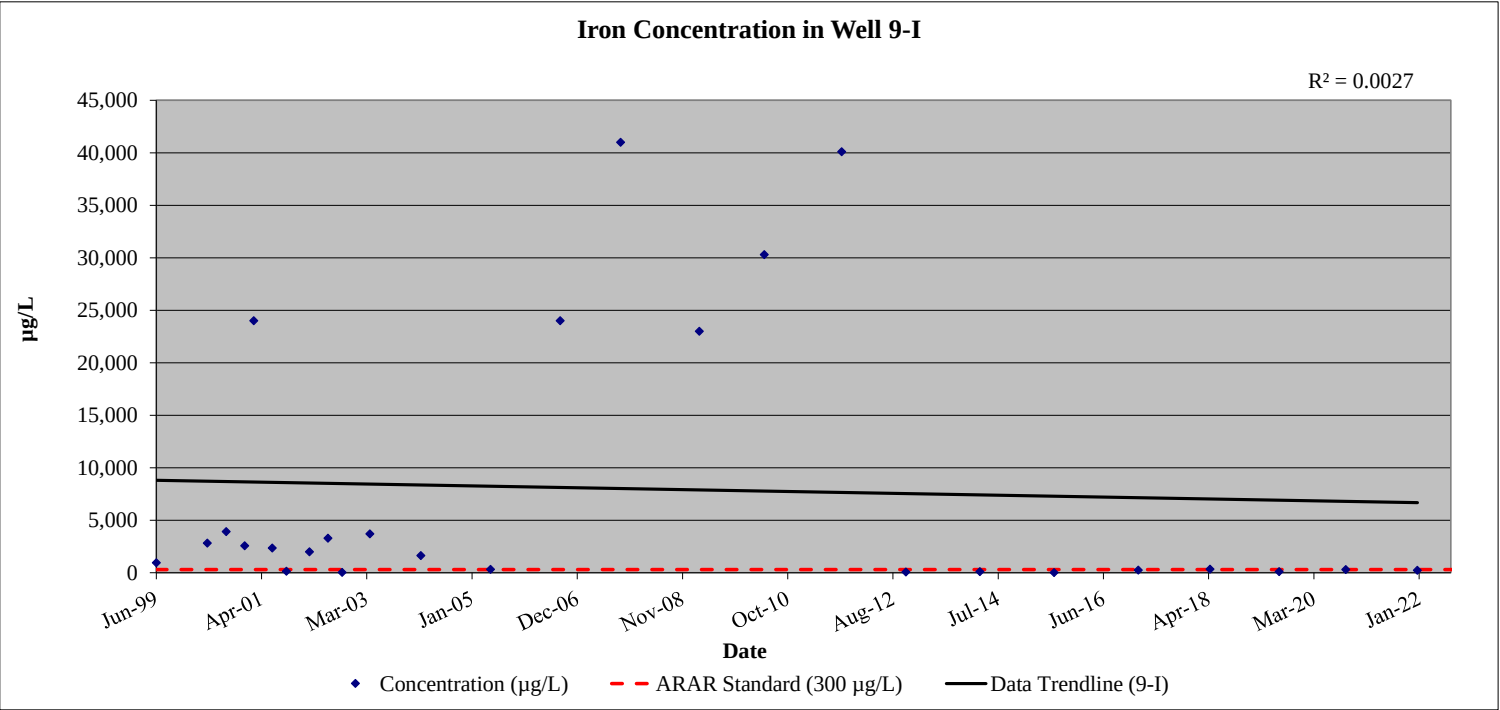
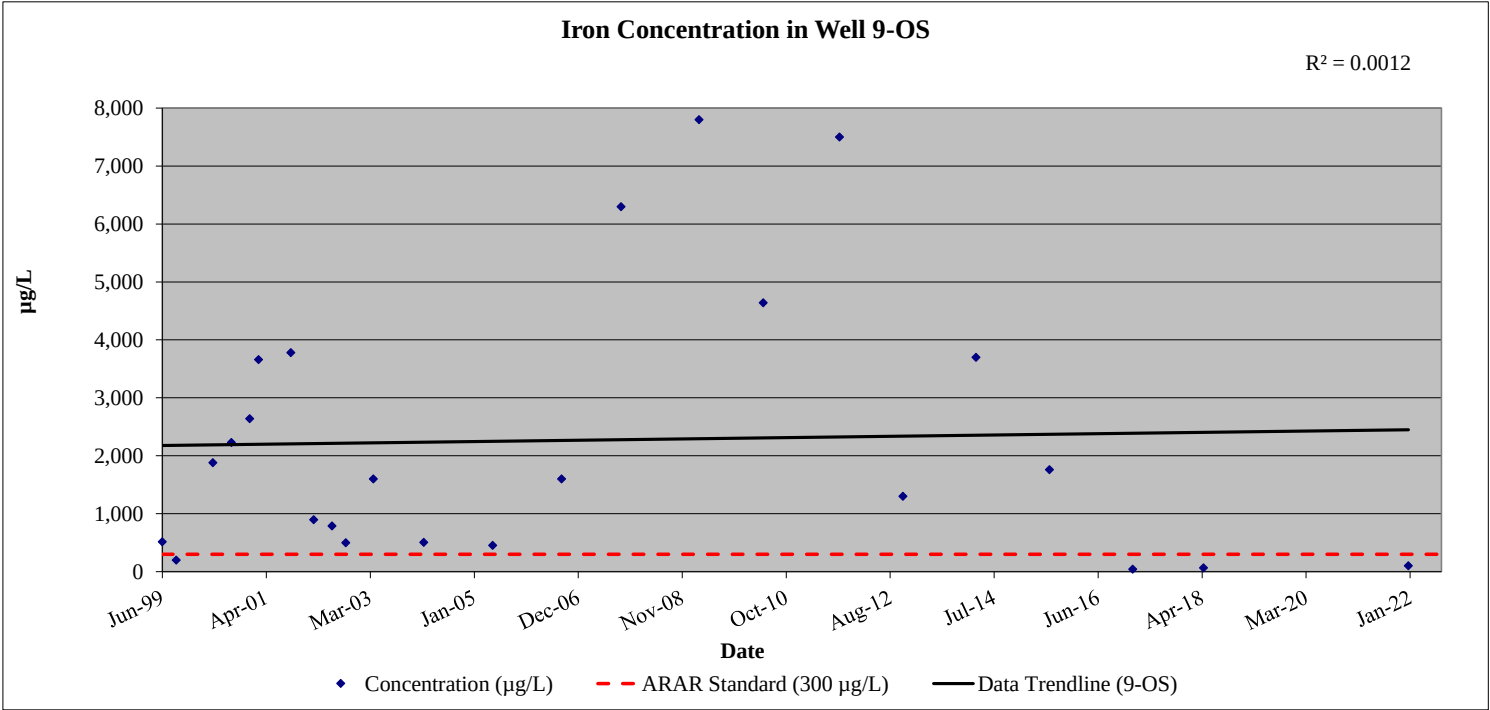


Table 14

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	< 5	3.6 J	< 5	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	2.3	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
Jan-22	0.34 U	NA	0.95 J	NA	0.34 U	NA	0.34 U	NA	NA	NA	NA	0.34 U	NA	0.34 U	0.34 U	4.25	0.34 U	0.34 U	0.34 U	0.44 J	0.34 U	0.34 U	0.34 U	NA	7.6	0.3 U	0.34 U	0.34 U	0.61 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.

Table 14

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

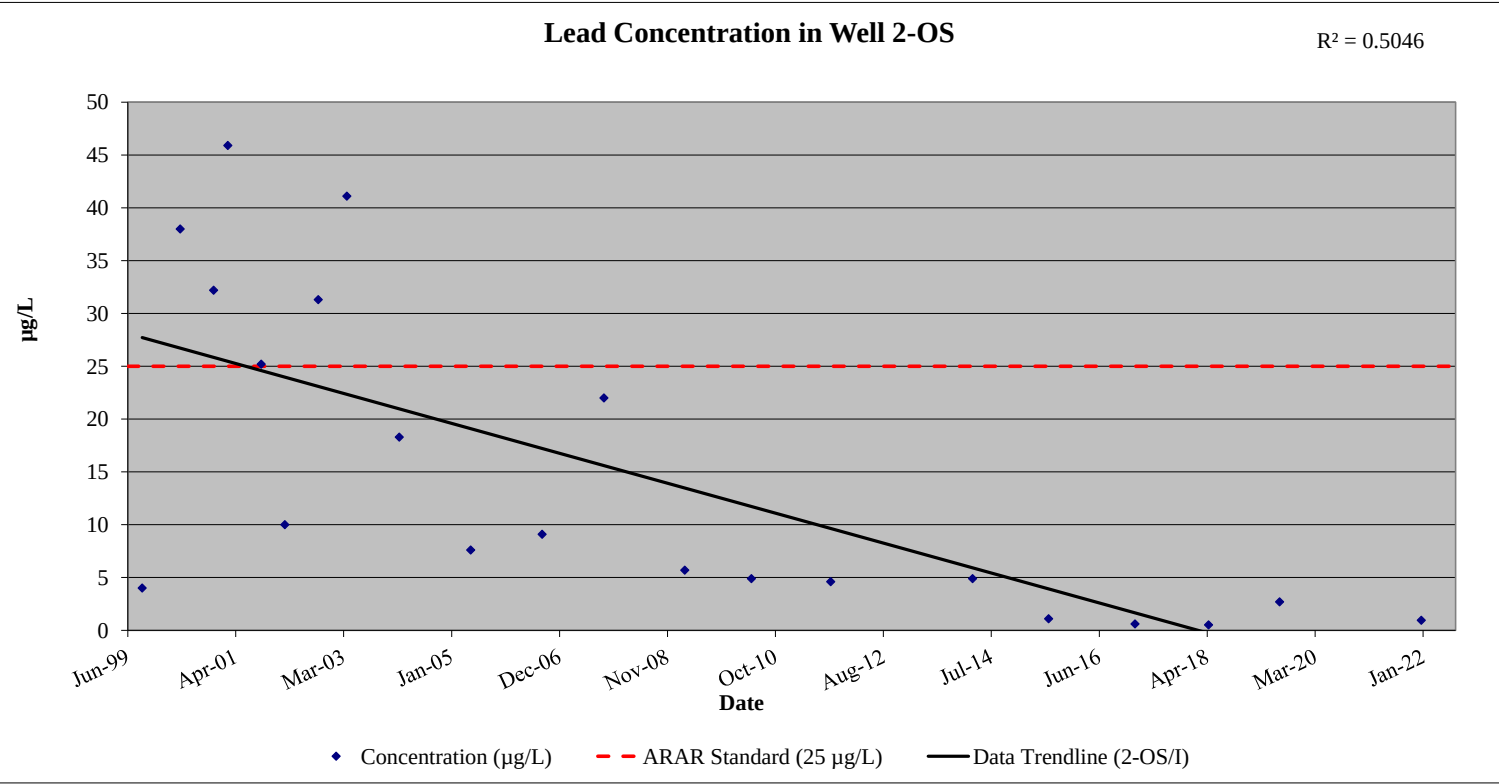
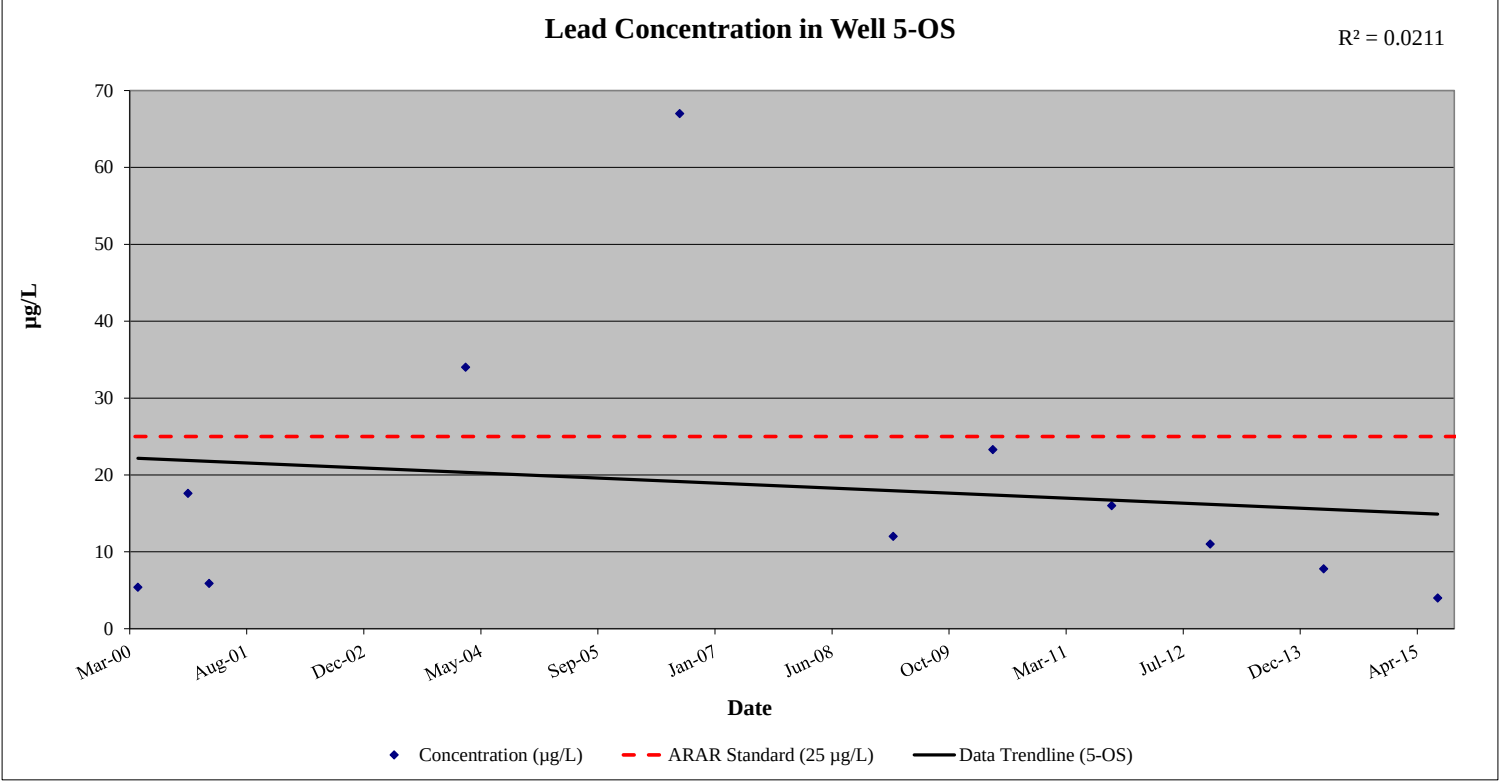
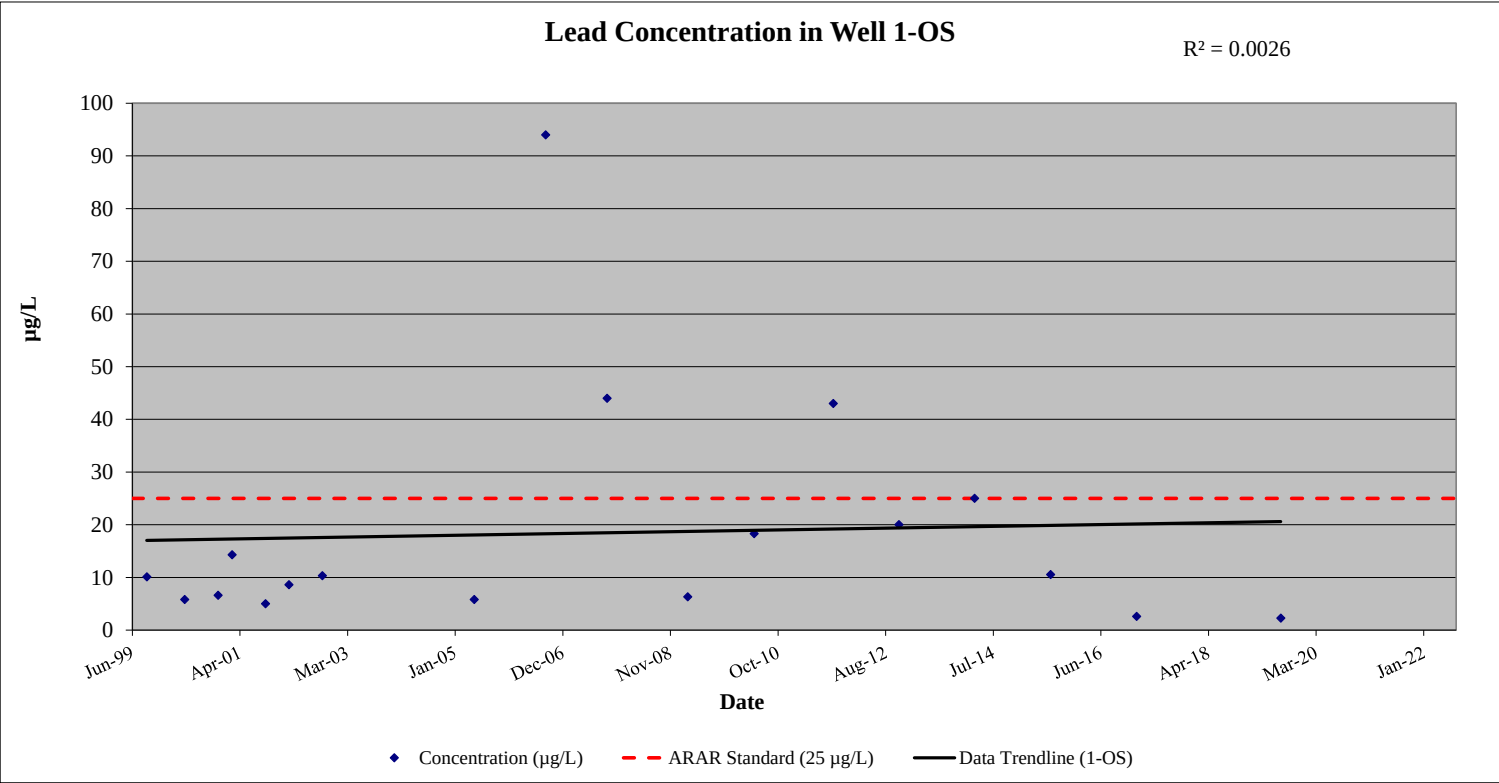


Table 15

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	
Jan-22	10,500	NA	15,700	NA	12,800	NA	14,400	NA	NA	NA	NA	8,800	NA	7,050	24,800	41,700	1,160	1,960	9,870	845	2,480	1,710	7,630	4,890	NA	1,860	3,450	4,920	5,560	6,270	5,920	

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.

Table 15

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

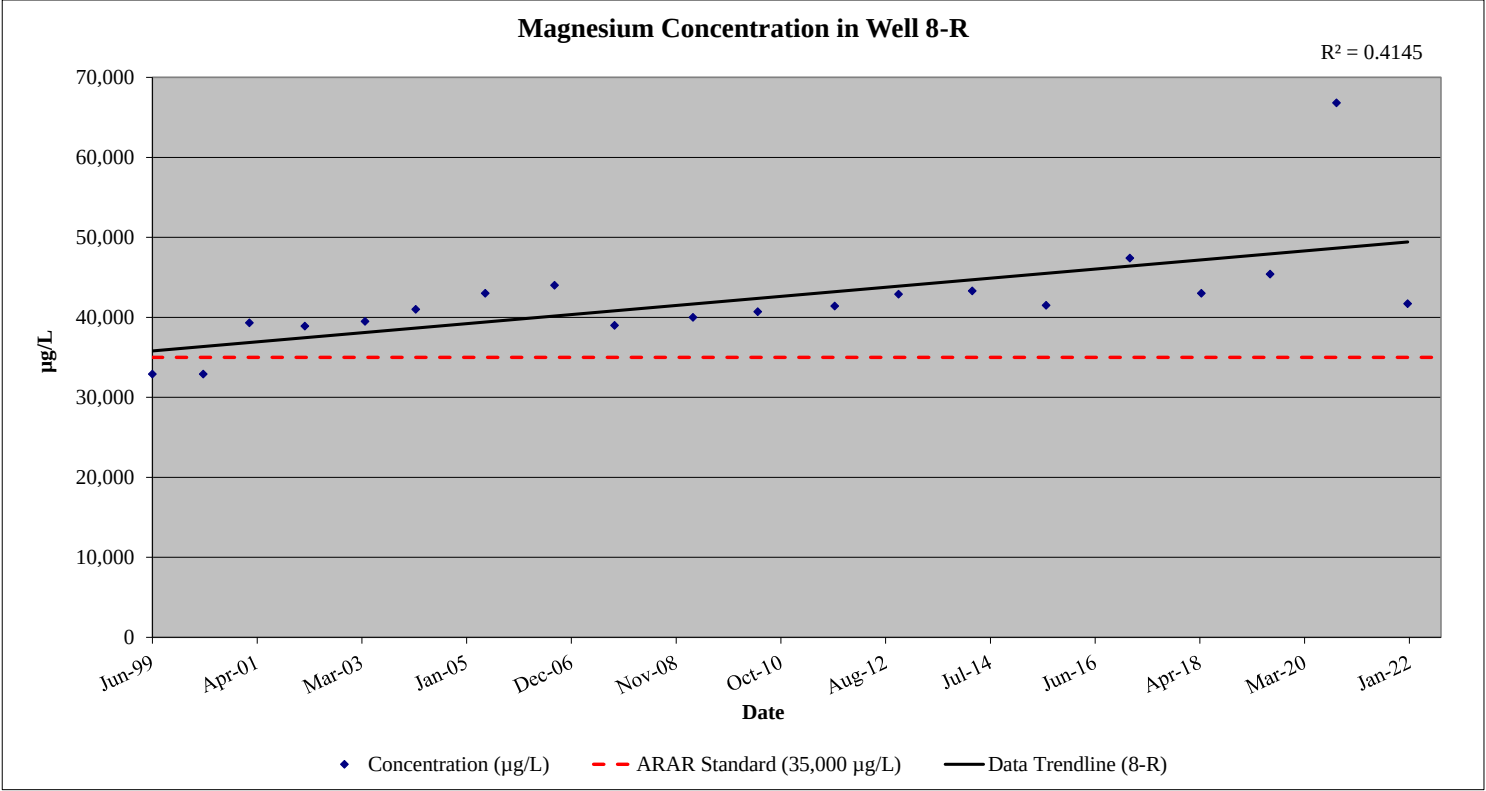
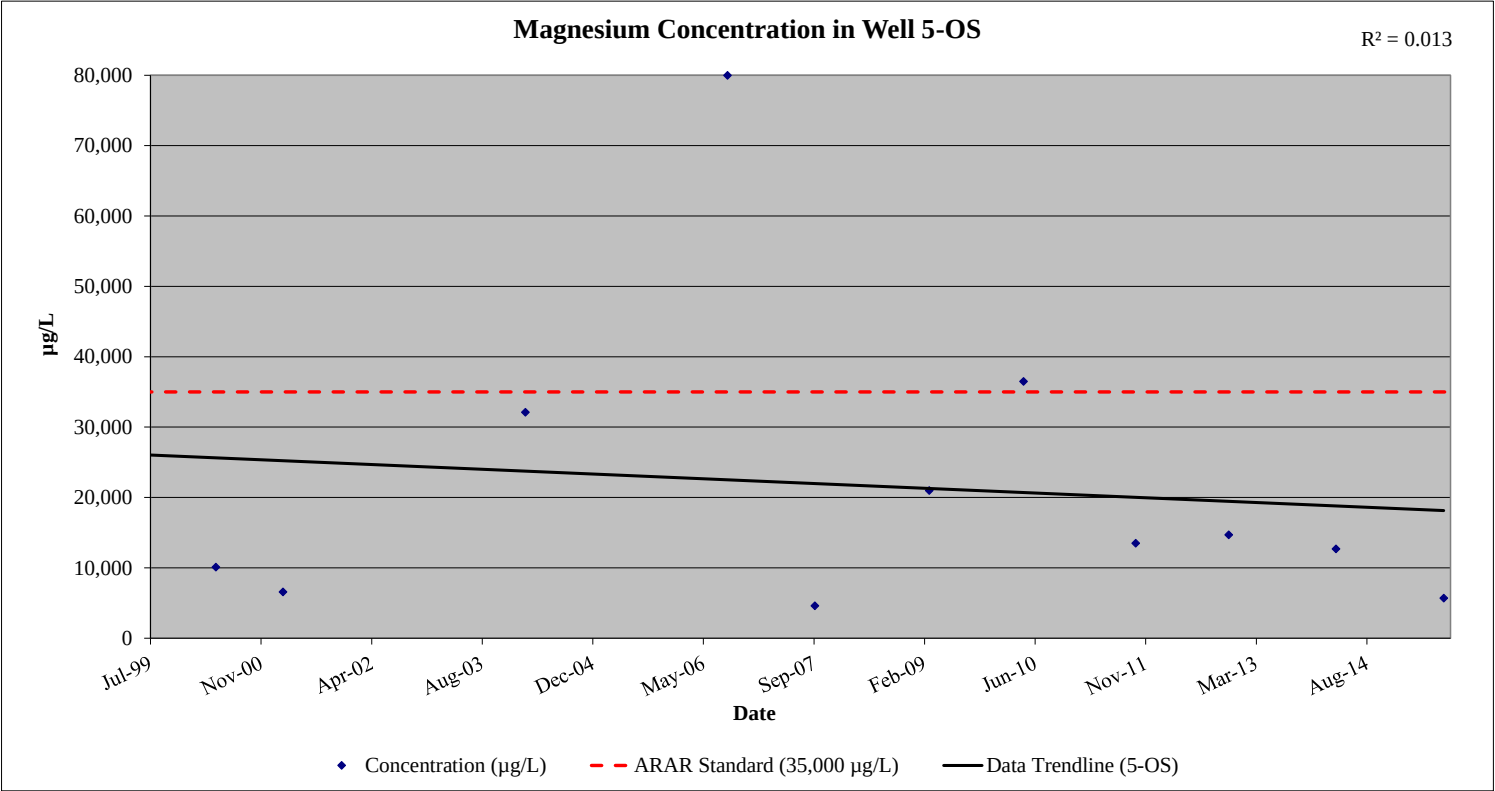


Table 16

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	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	< 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	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	0.44 U	0.75 J	62.70	0.44 U	
Jan-22	2,215	NA	54.51	NA	107.4	NA	73.59	NA	NA	NA	NA	10.06	NA	226.8	3,129	4,152	2.1	5.03	2,019	52.22	0.44 U	5.94	4.26	3.71	NA	2 U	5.00 J	0.44 U	0.44 U	33.45	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.

Table 16

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

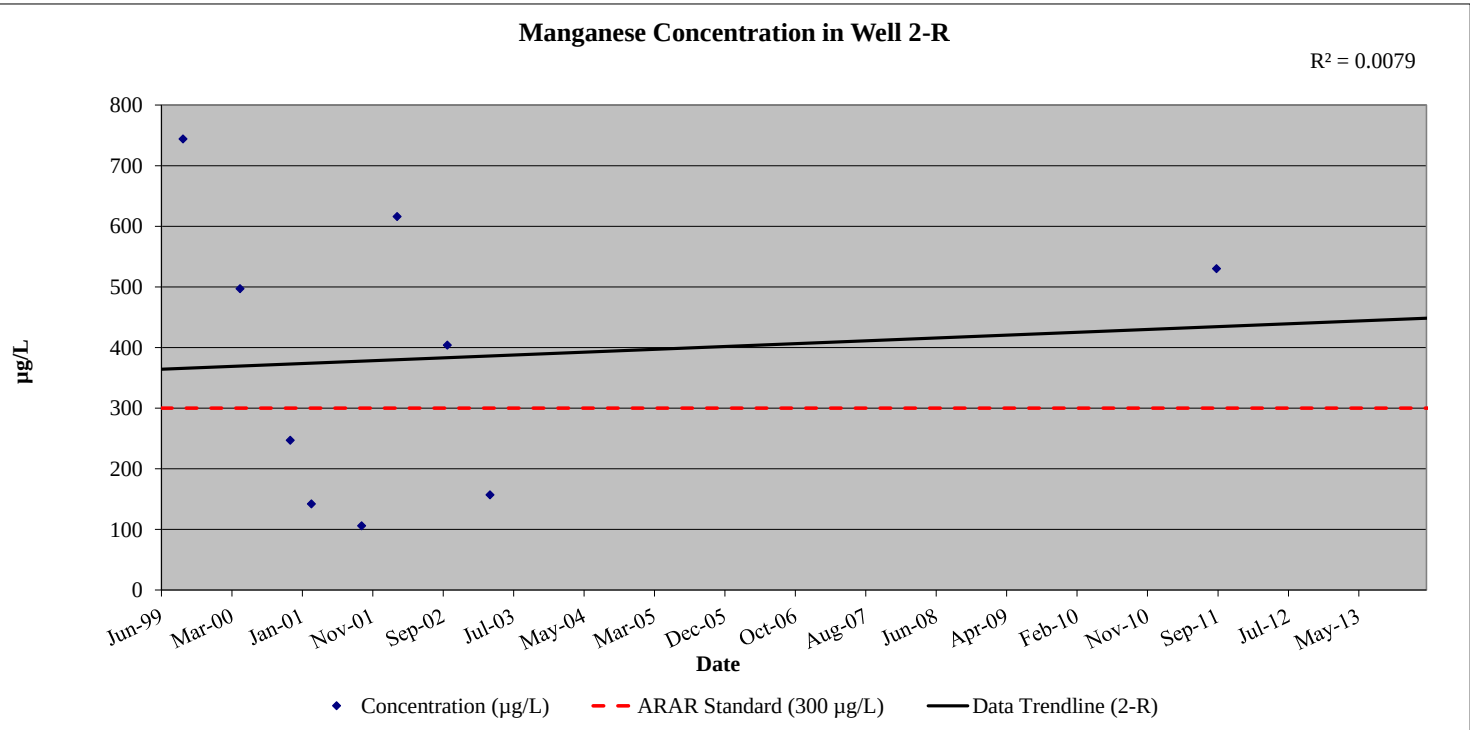
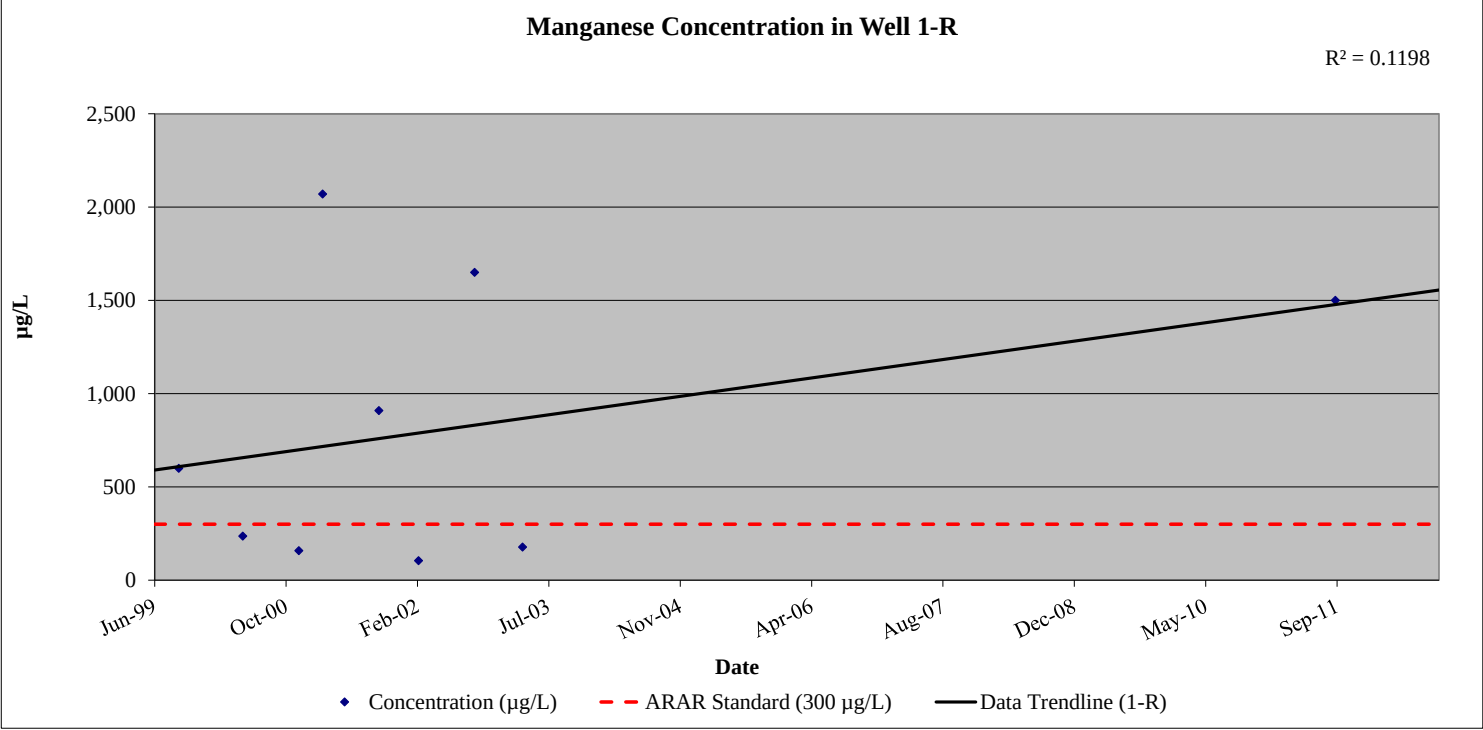
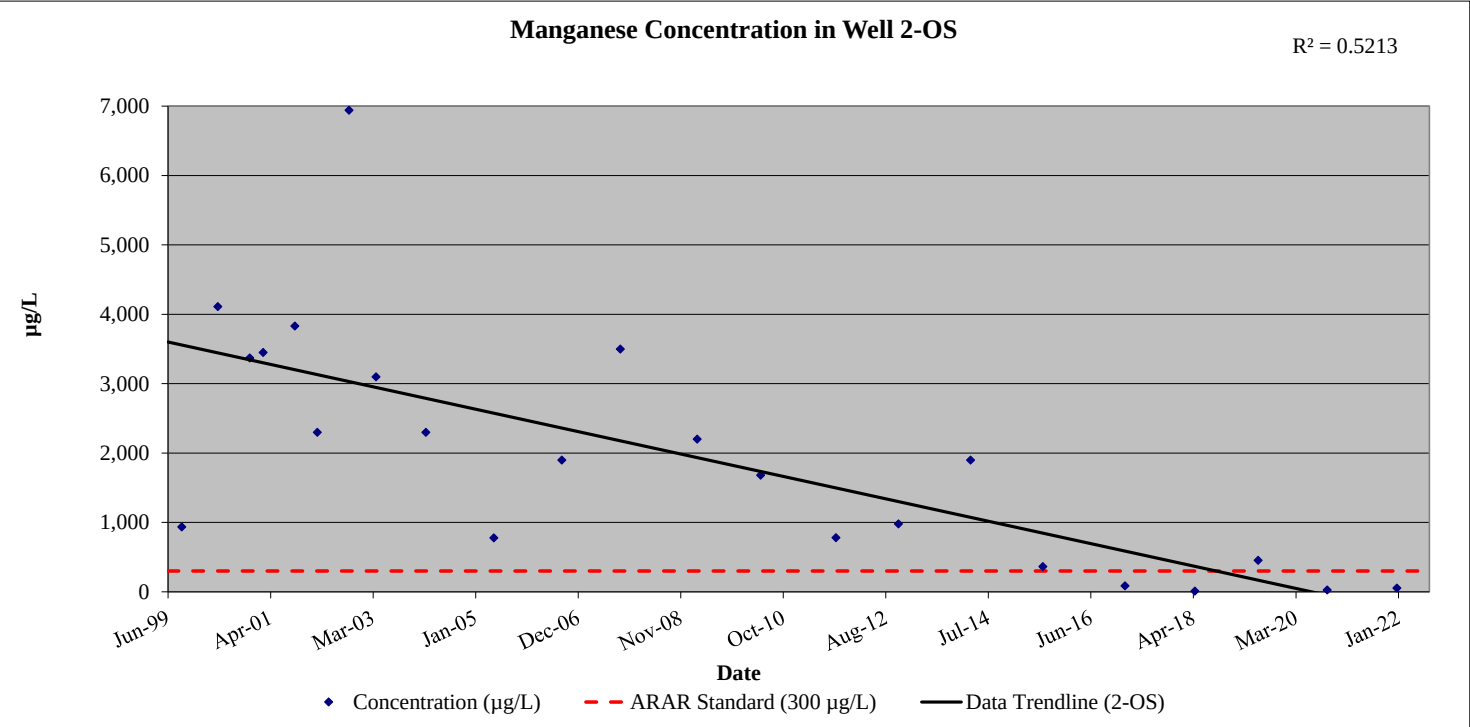
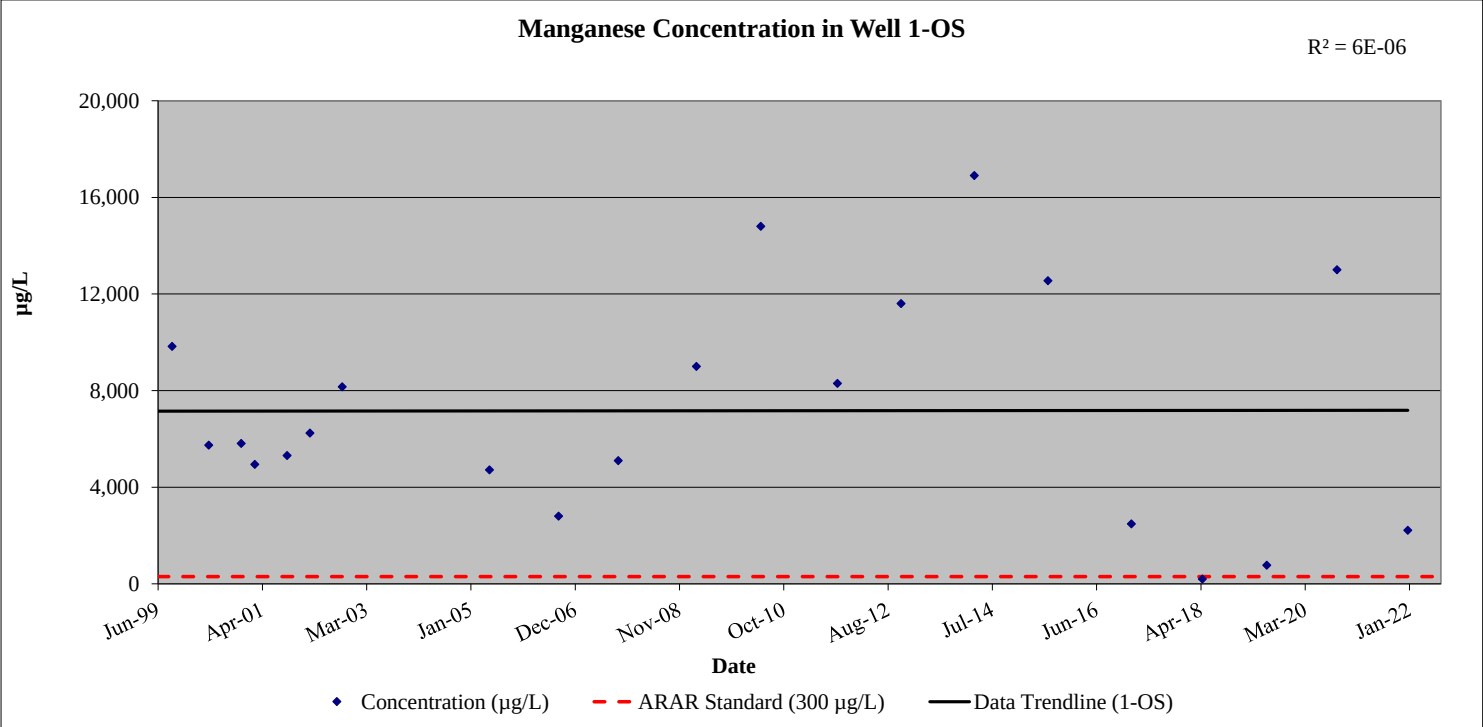


Table 16

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

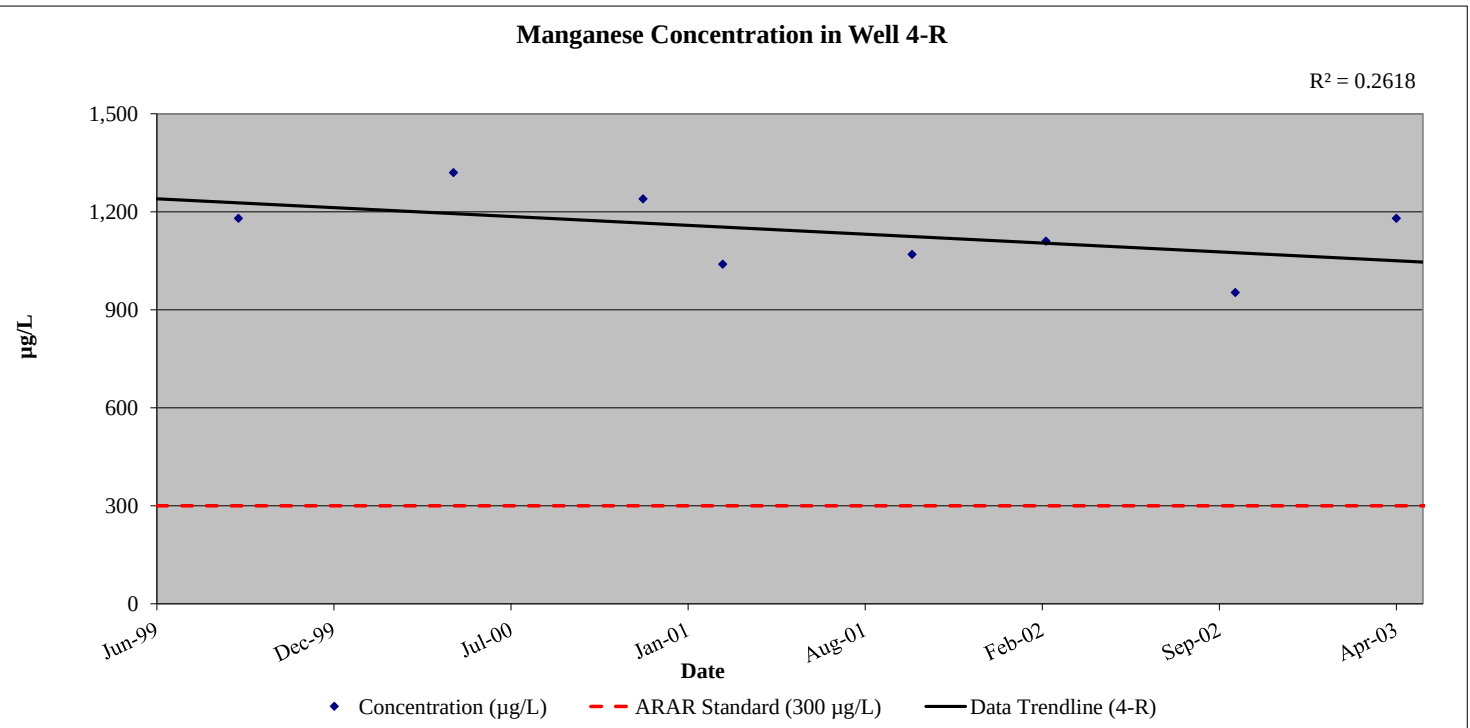
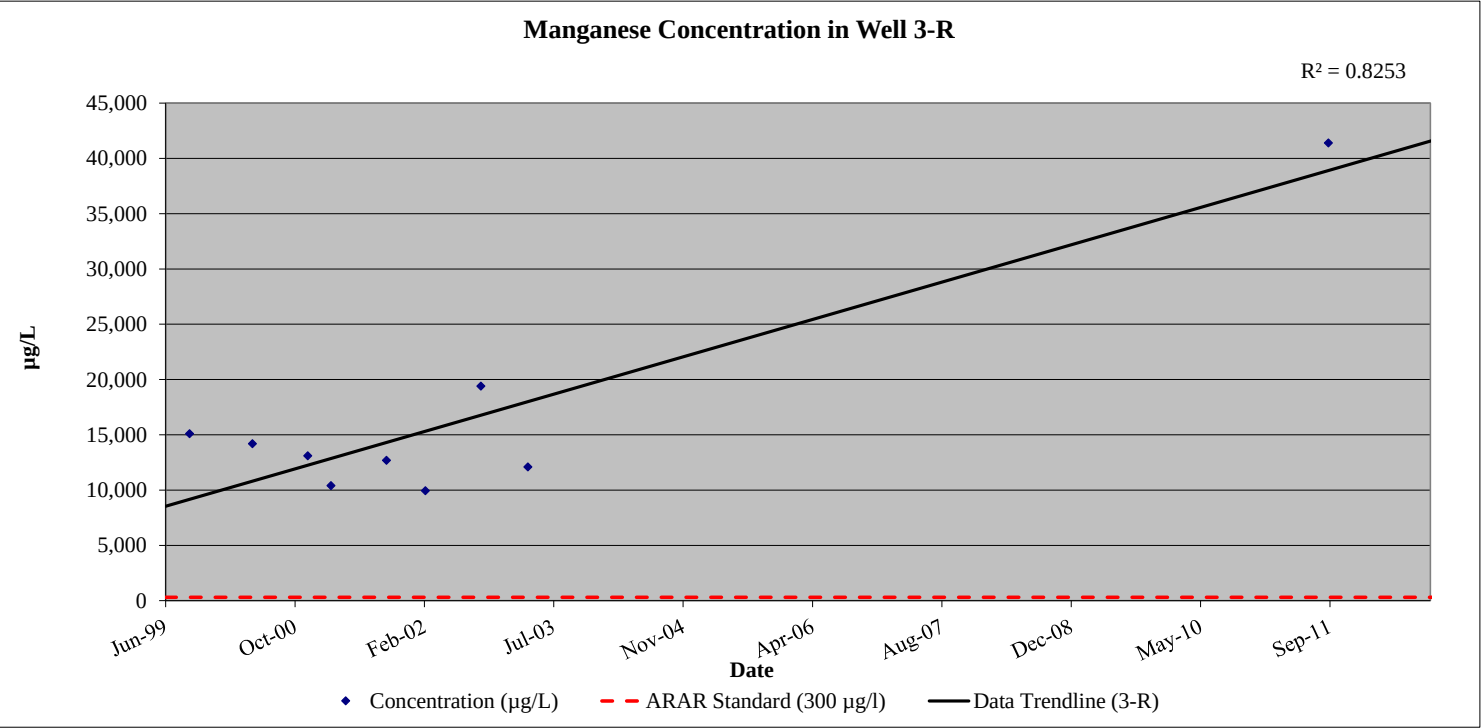
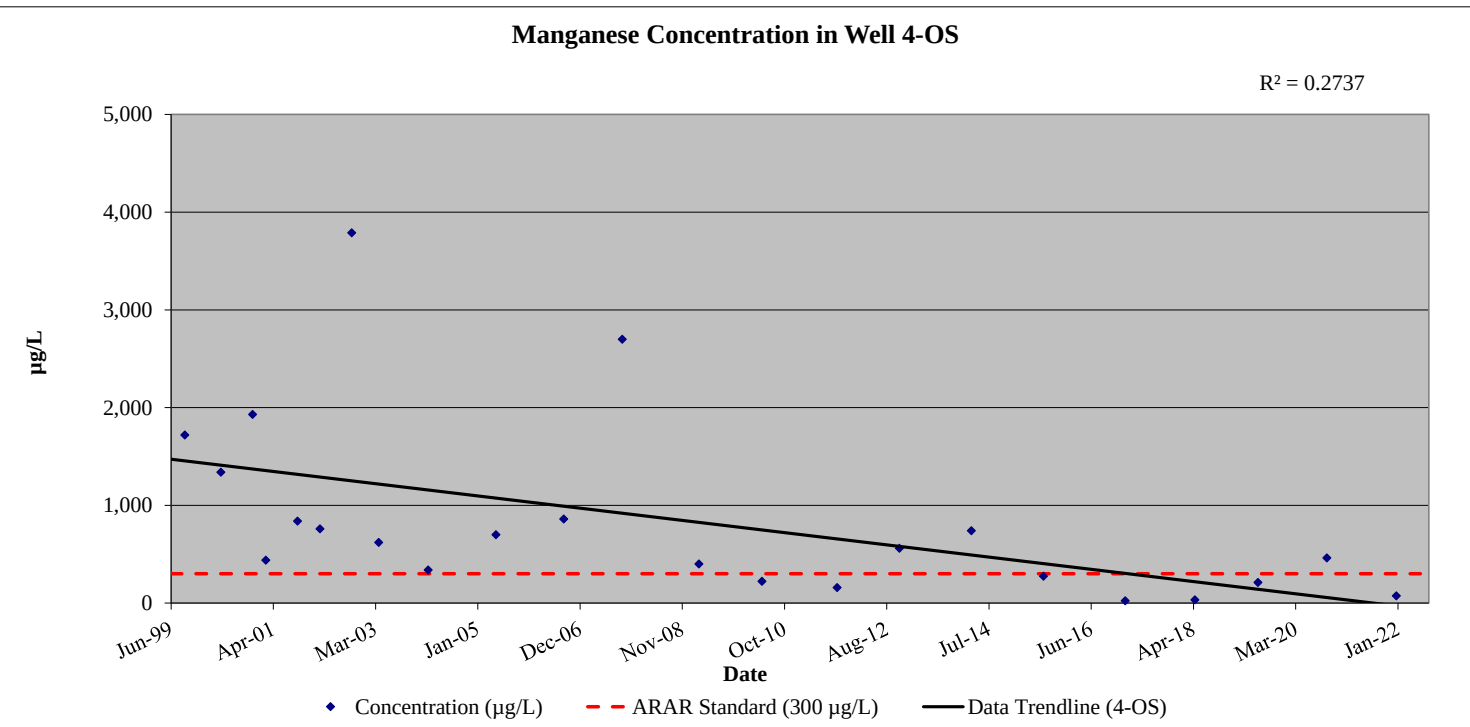
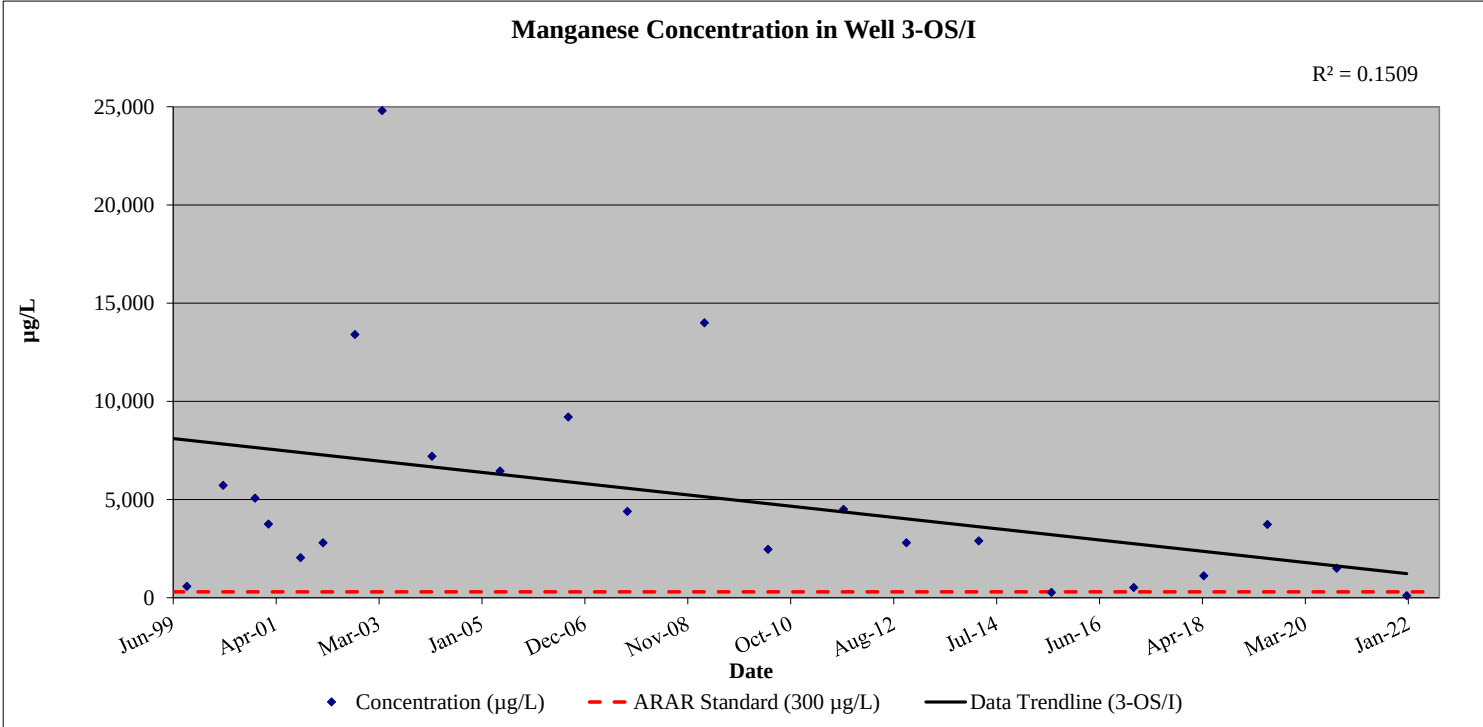


Table 16

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

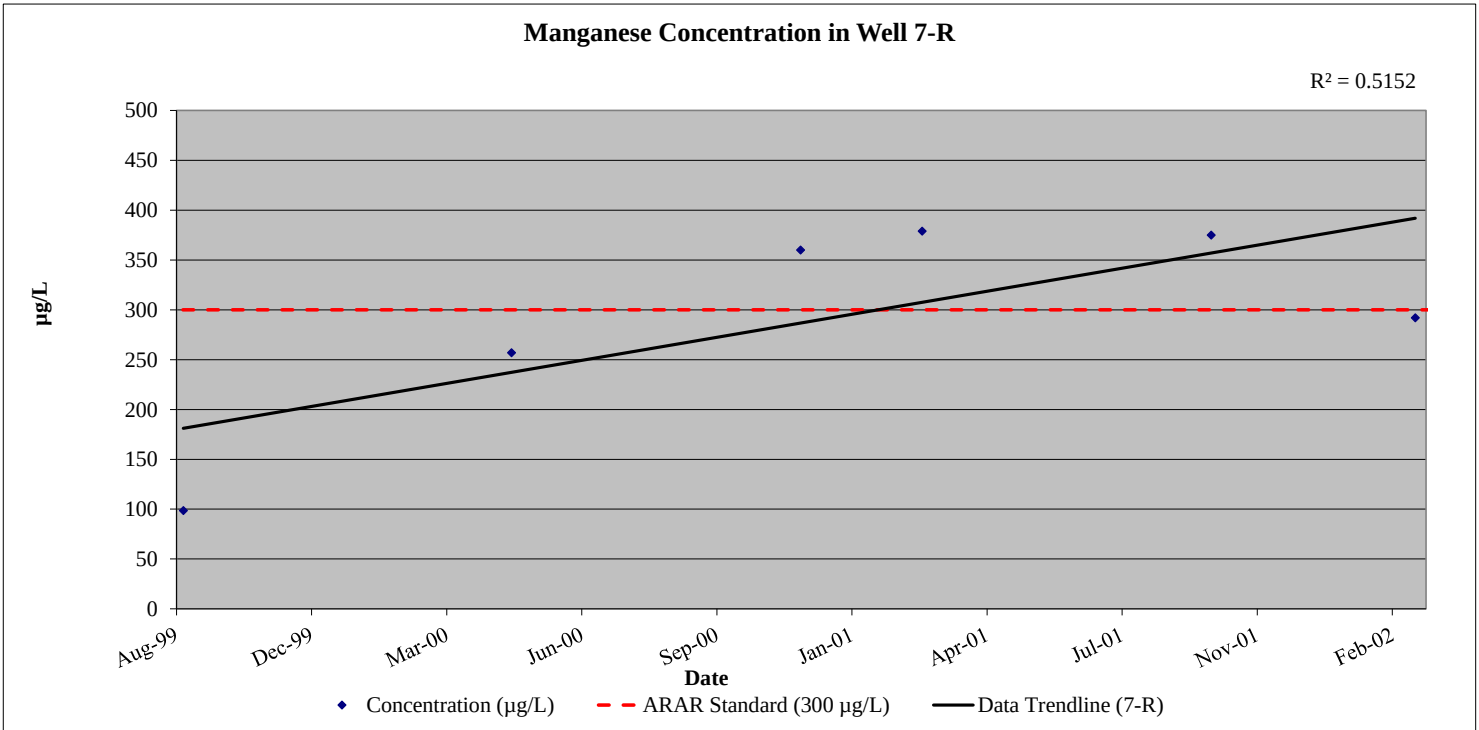
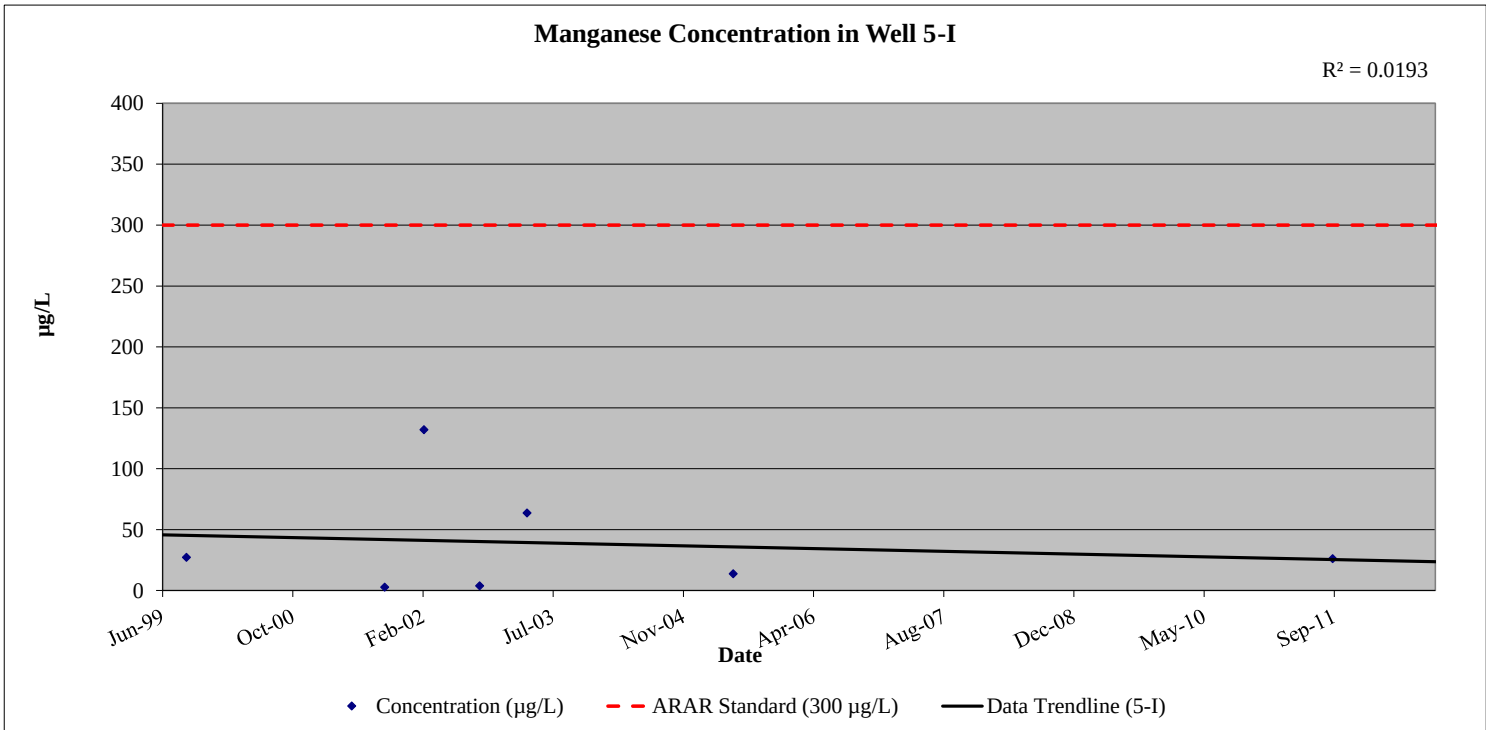
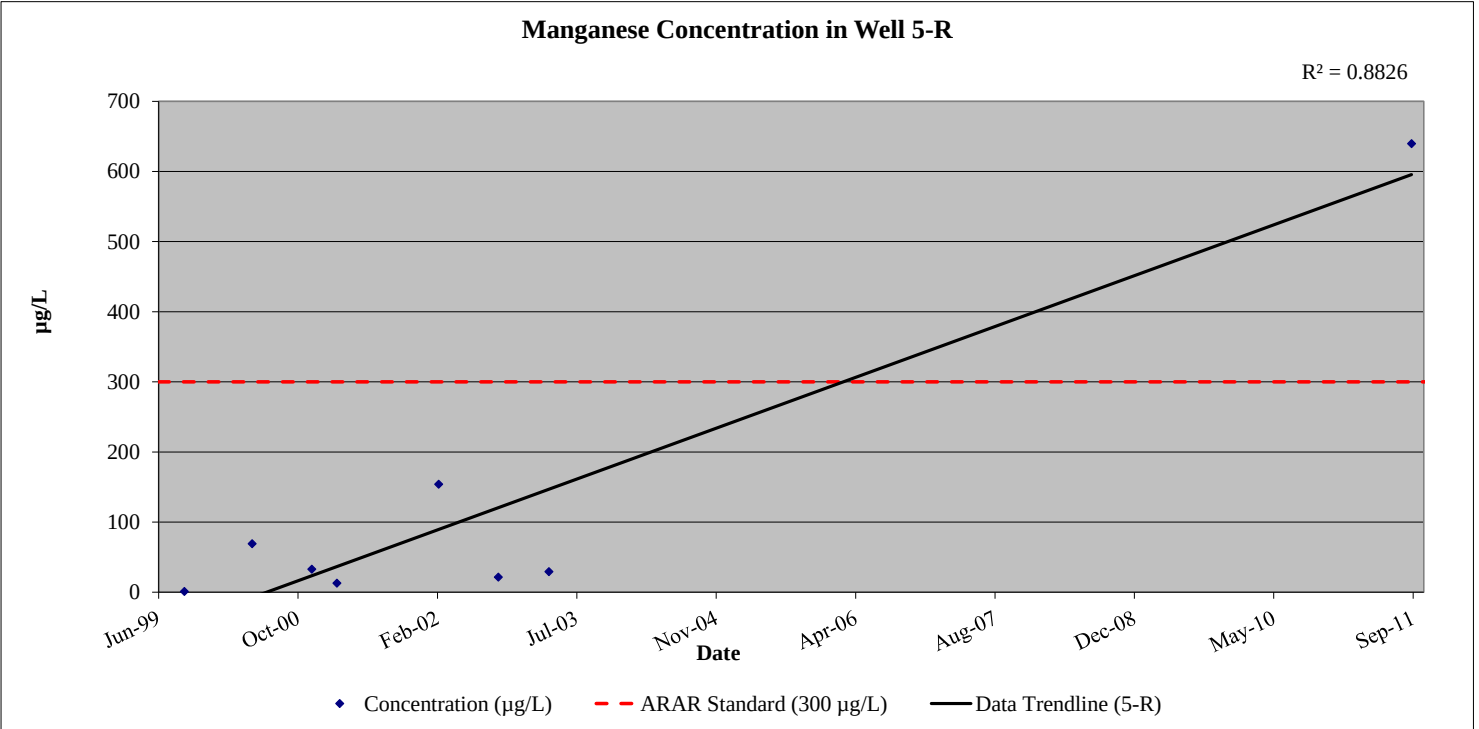
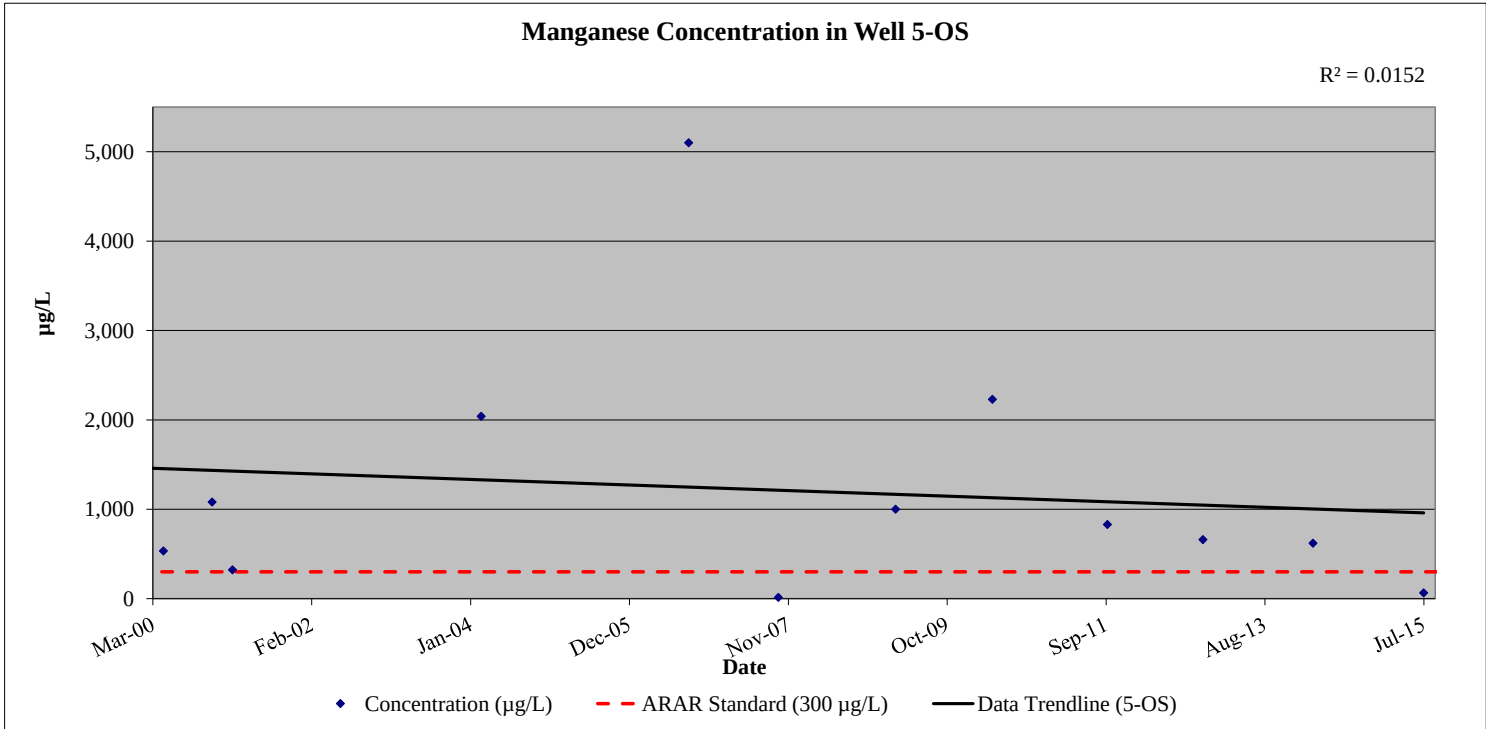


Table 16

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

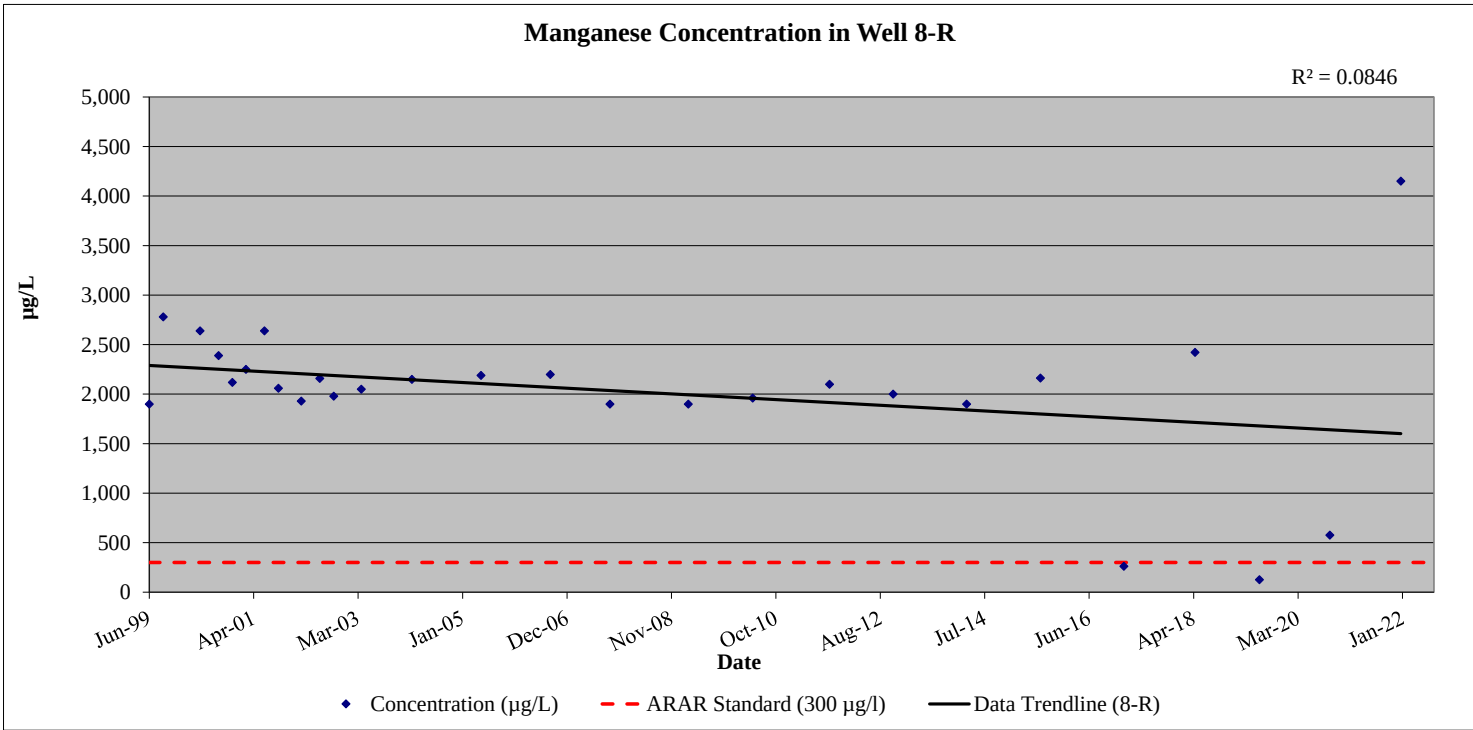
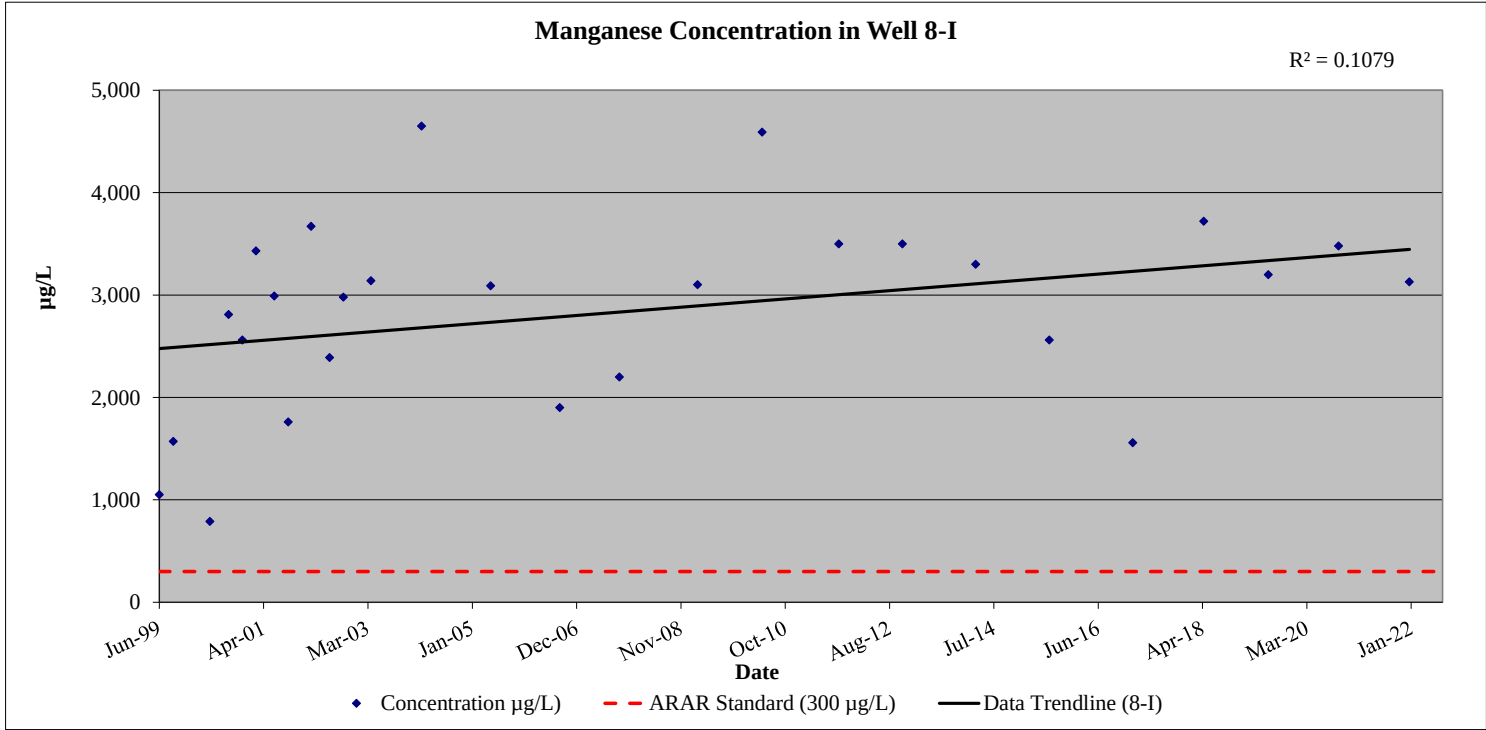
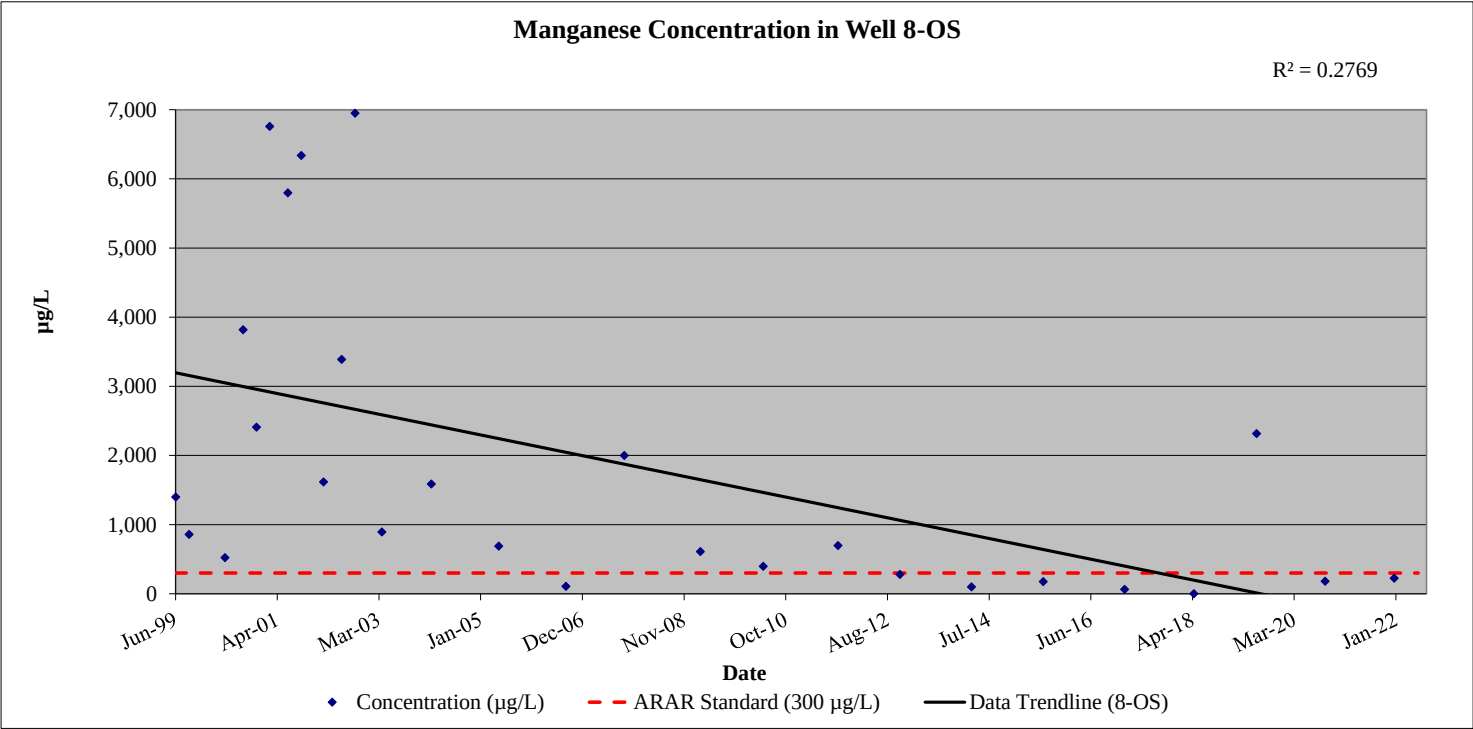
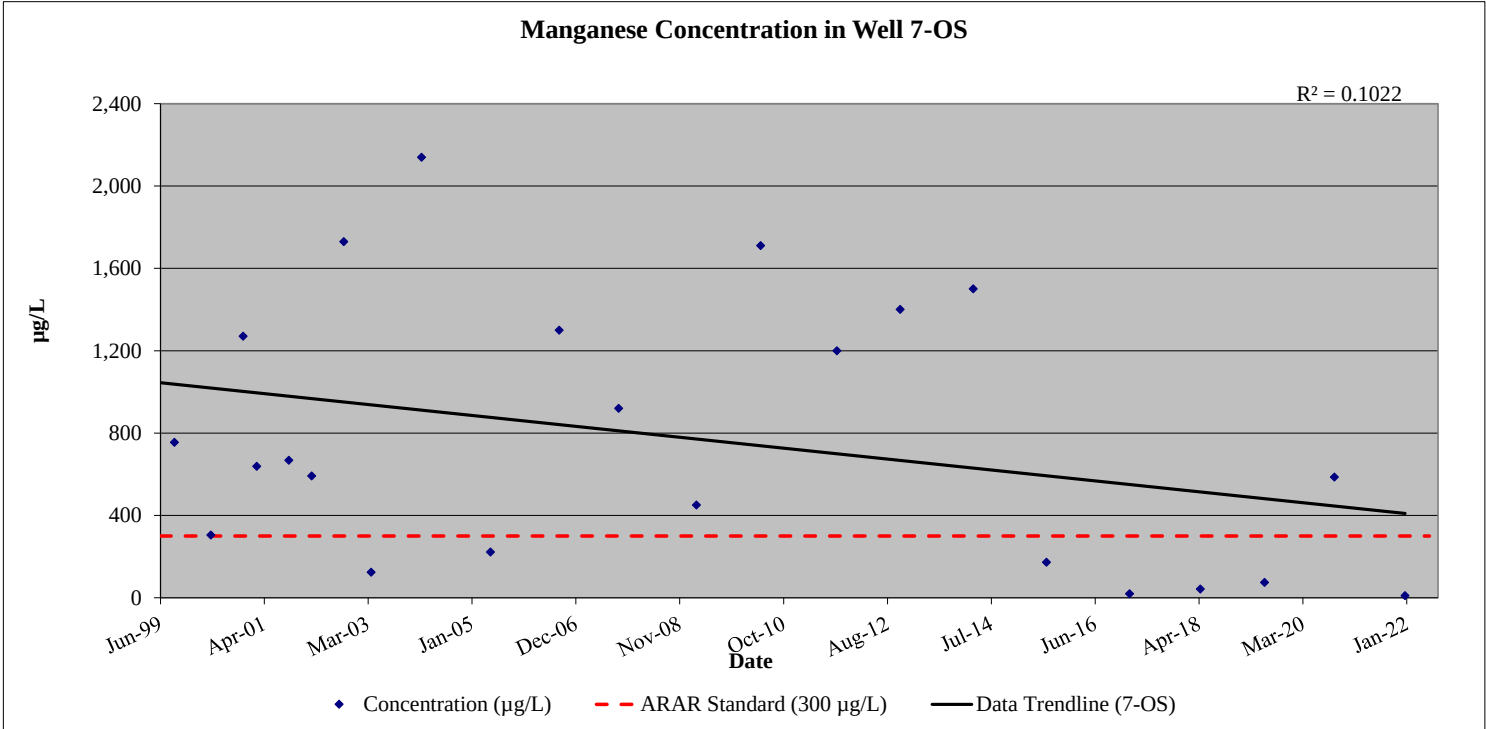


Table 16

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

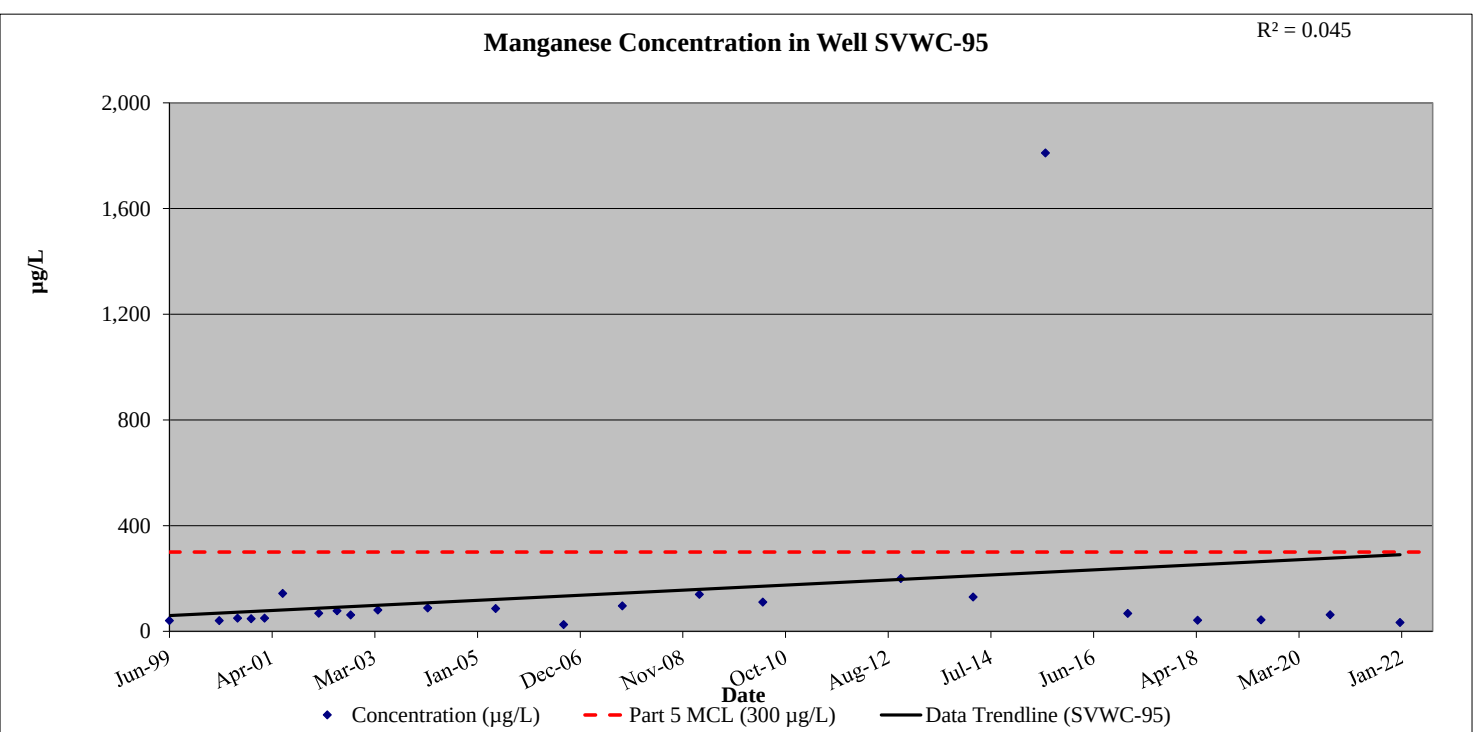
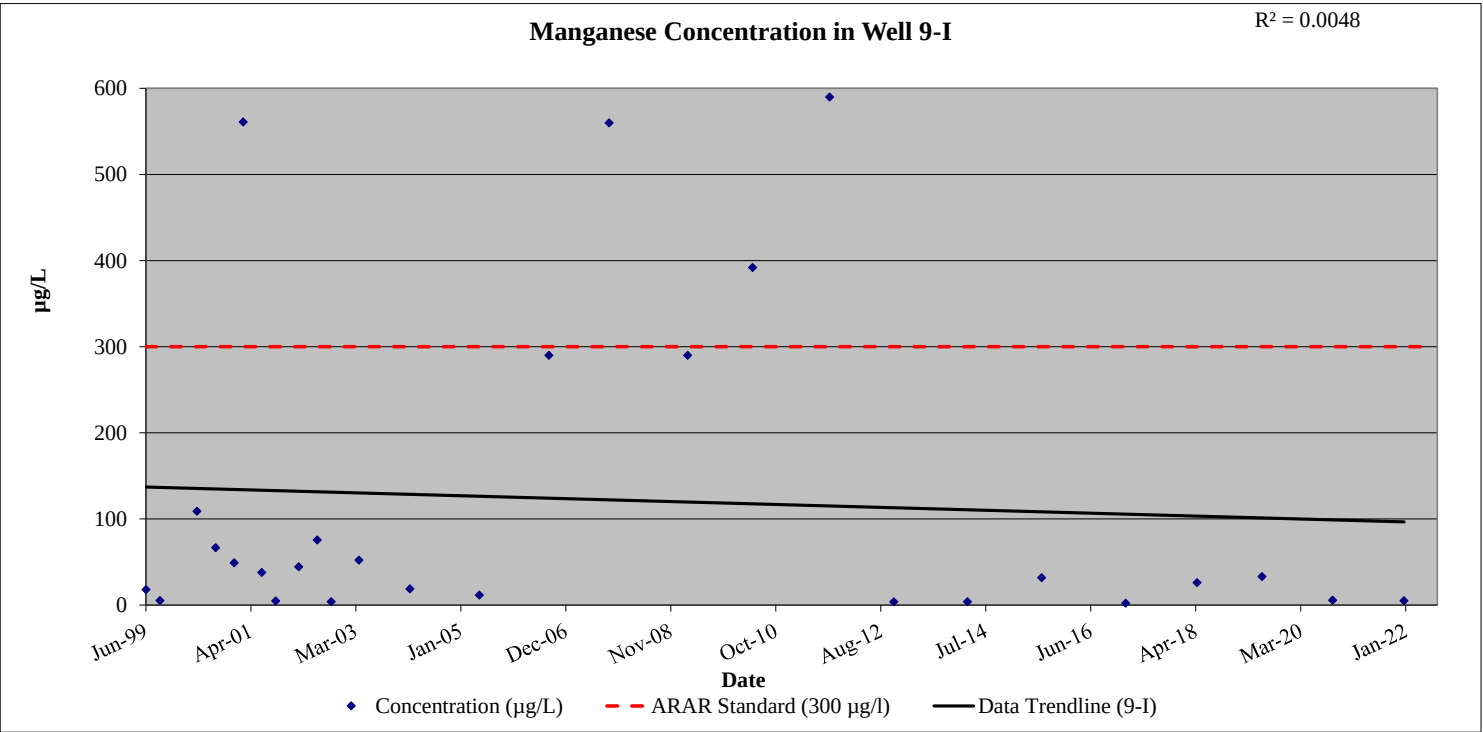
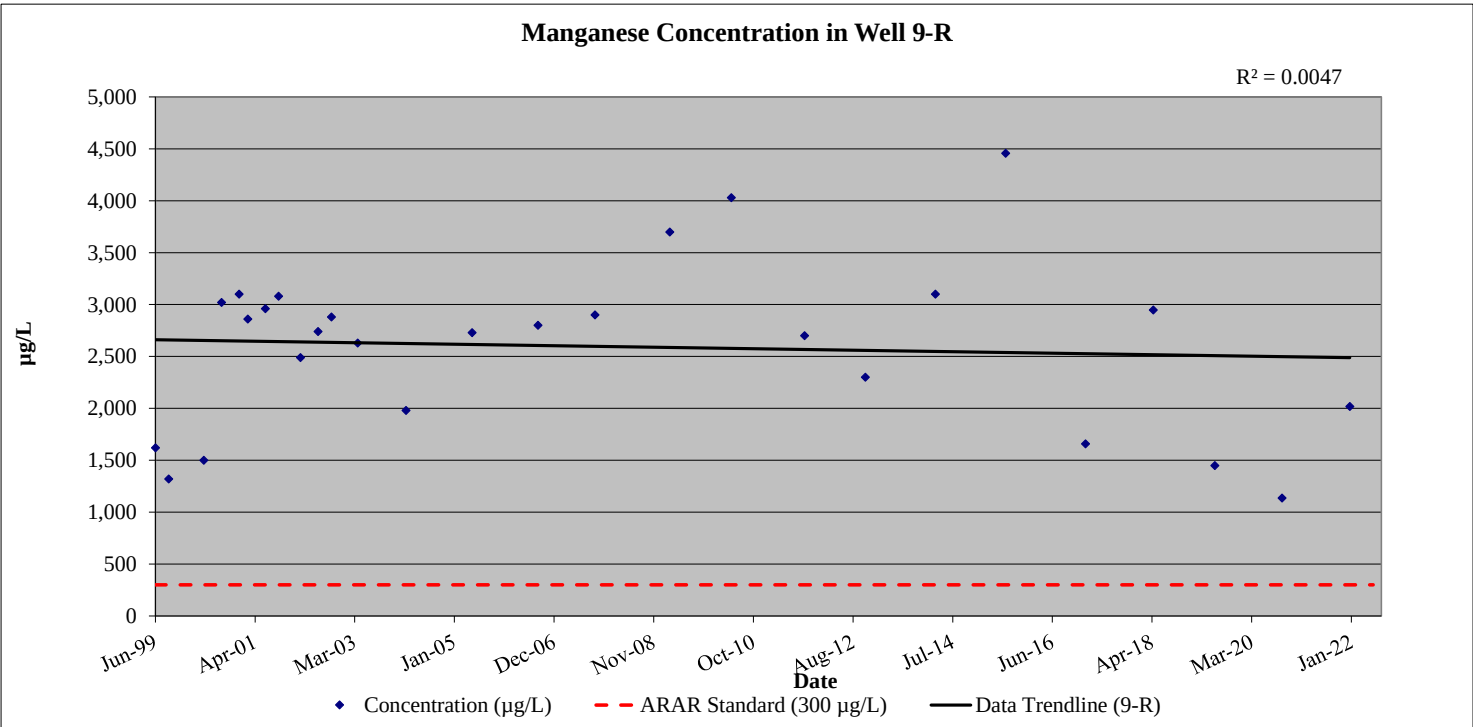
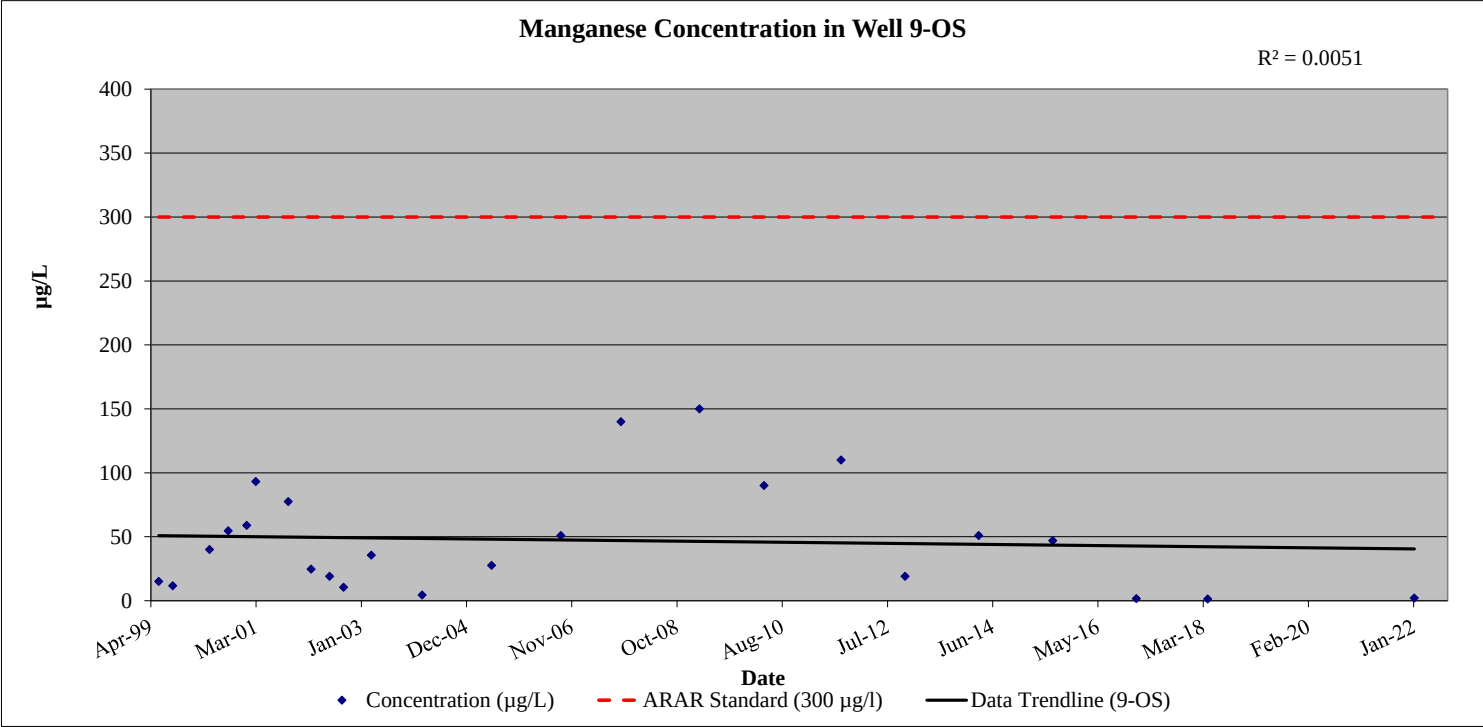


Table 17

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	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
Jan-22	38.13	NA	8.11	NA	122.3	NA	19.62	NA	NA	NA	NA	0.55 U	NA	13.9	5.41	47.74	0.55 U	0.55 U	27.91	2.41	0.55 U	2.81	0.83 J	2.6	NA	0.7 J	0.6 U	0.55 U	0.55 U	0.64 J	0.55 U

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.

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

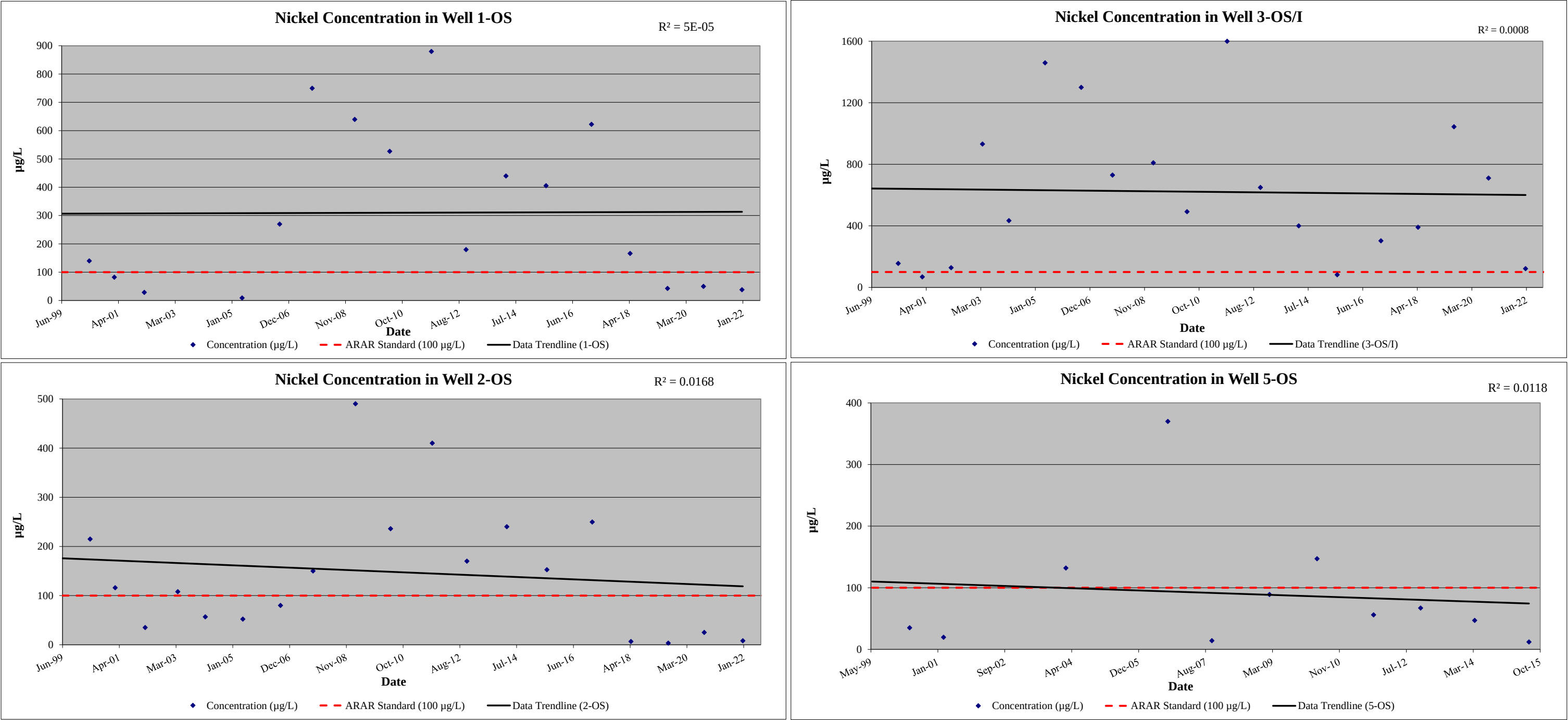


Table 18

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
Jan-22	90,600	NA	32,000	NA	26,800	NA	80,500	NA	NA	NA	NA	12,700	NA	24,600	44,700	37,800	16,100	5,880	48,400	2,640	3,770	3,700	3,640	3,720	NA	18,400	7,370	46,100	50,800	44,500	54,900

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

Table 18

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

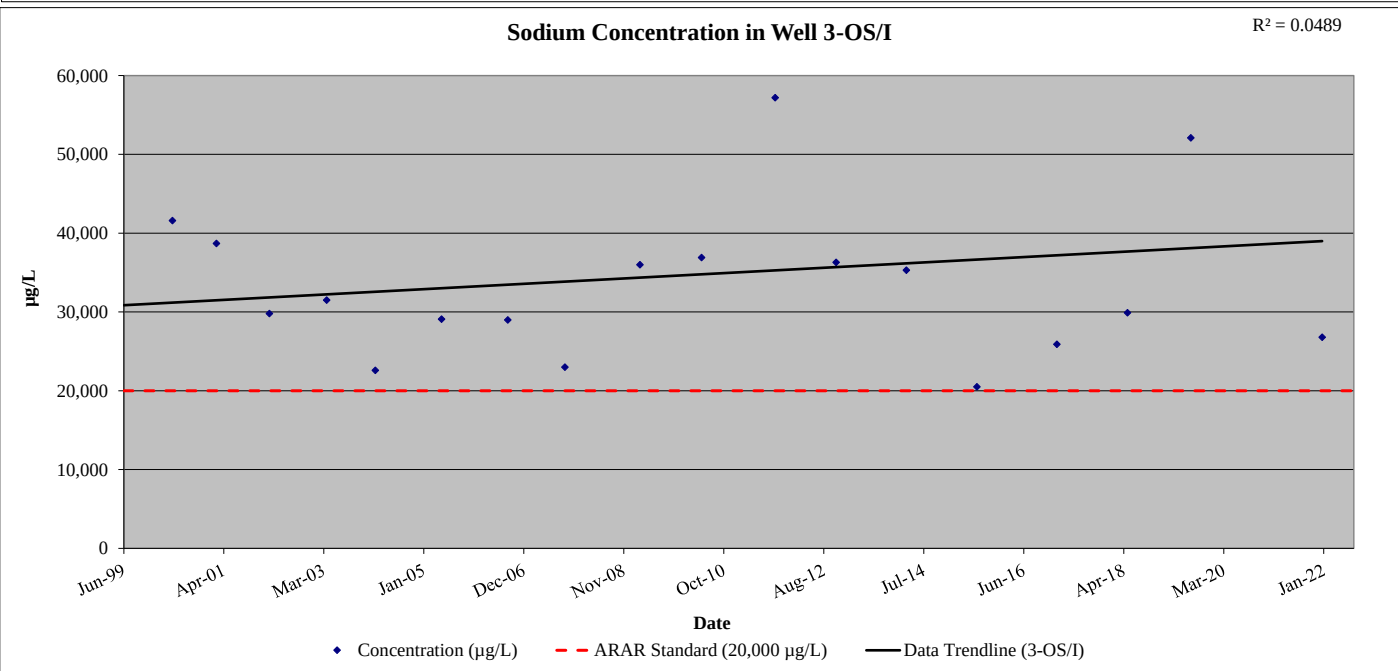
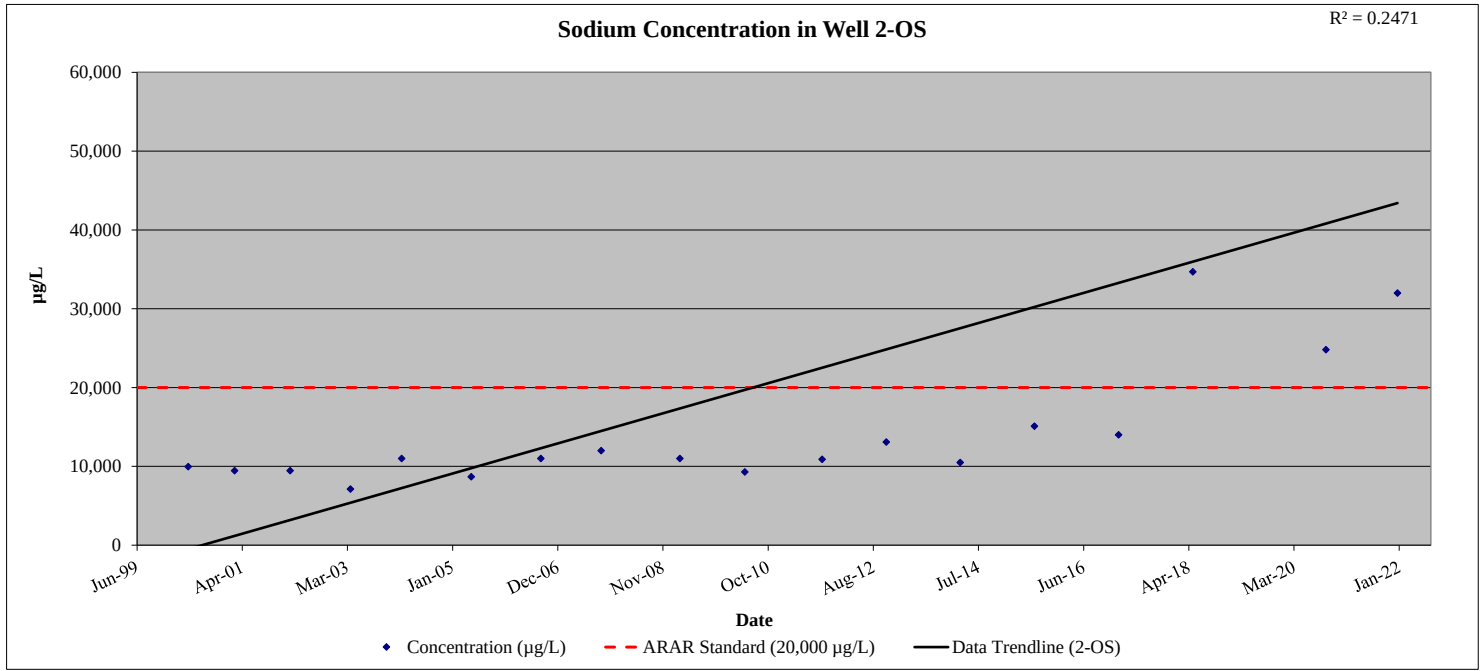
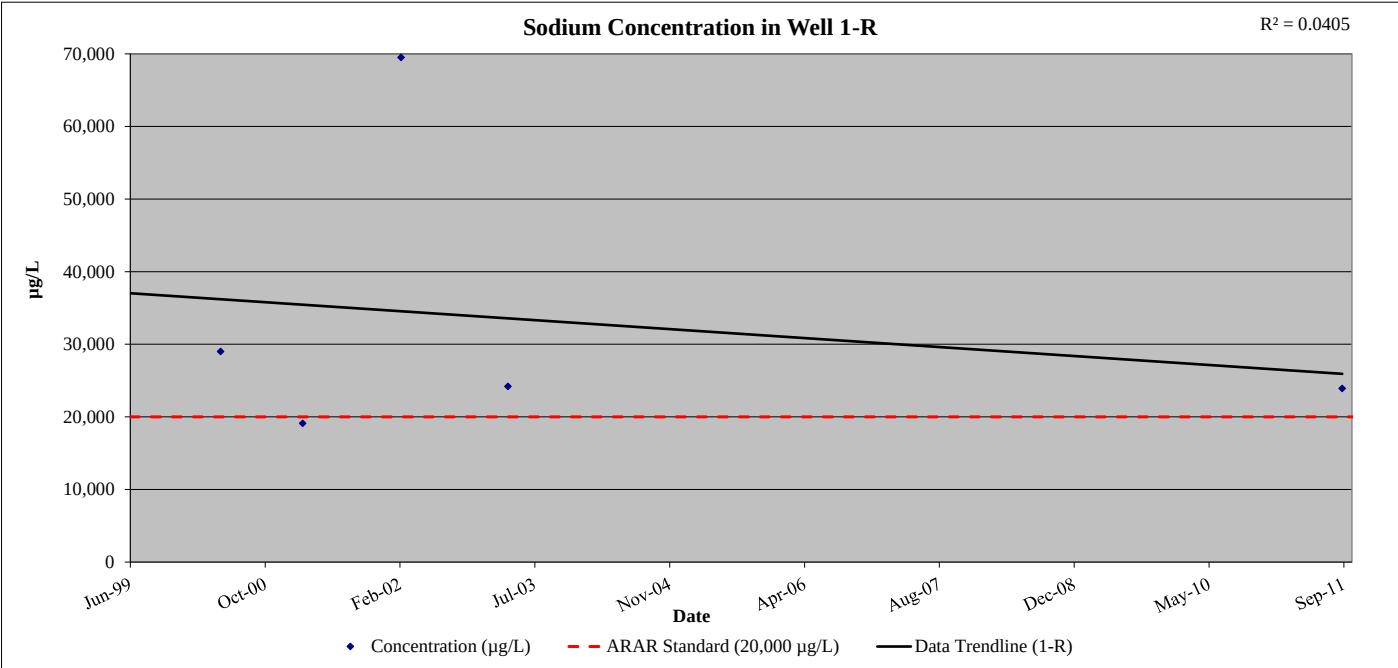
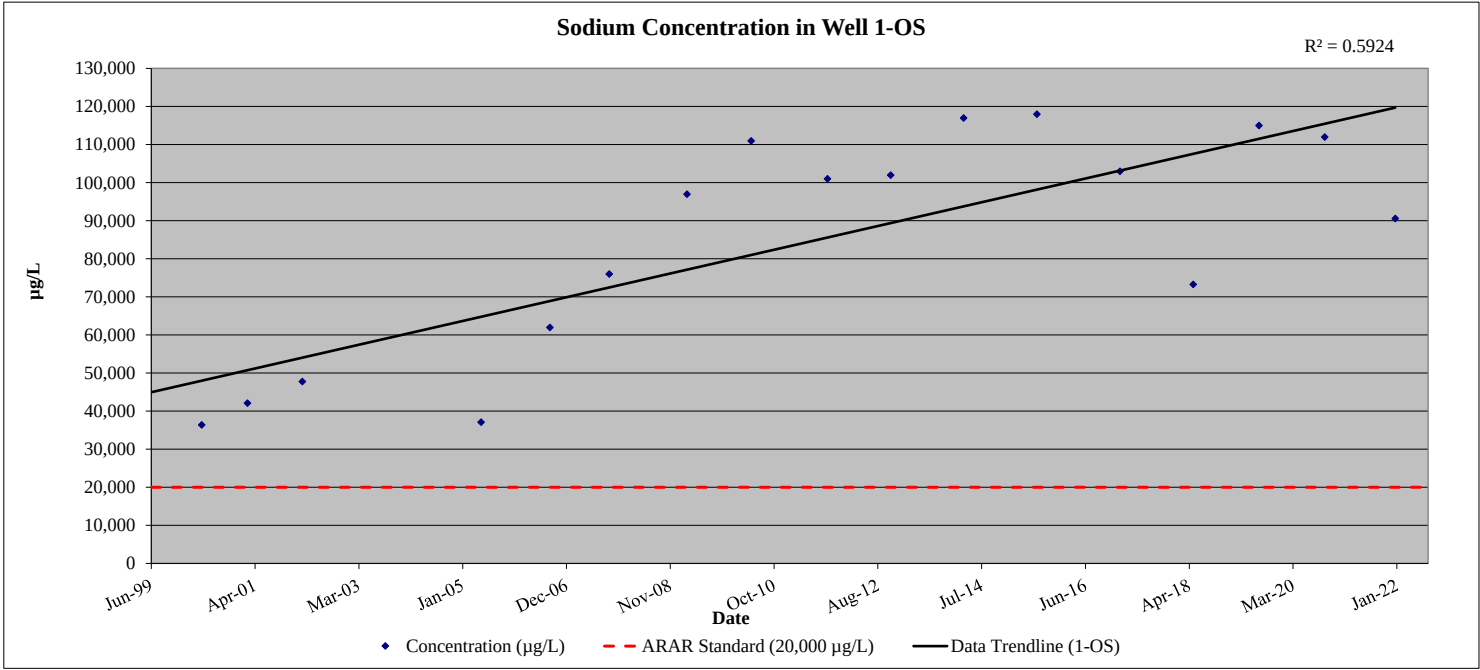


Table 18

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

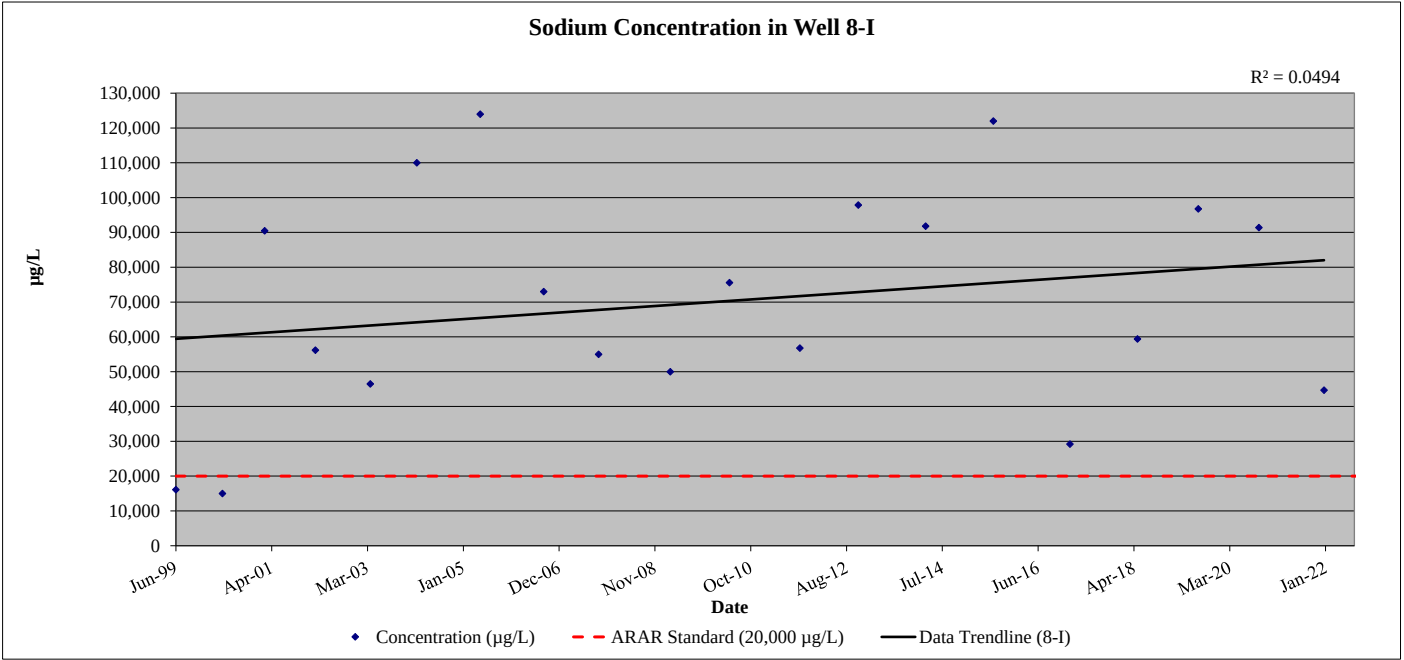
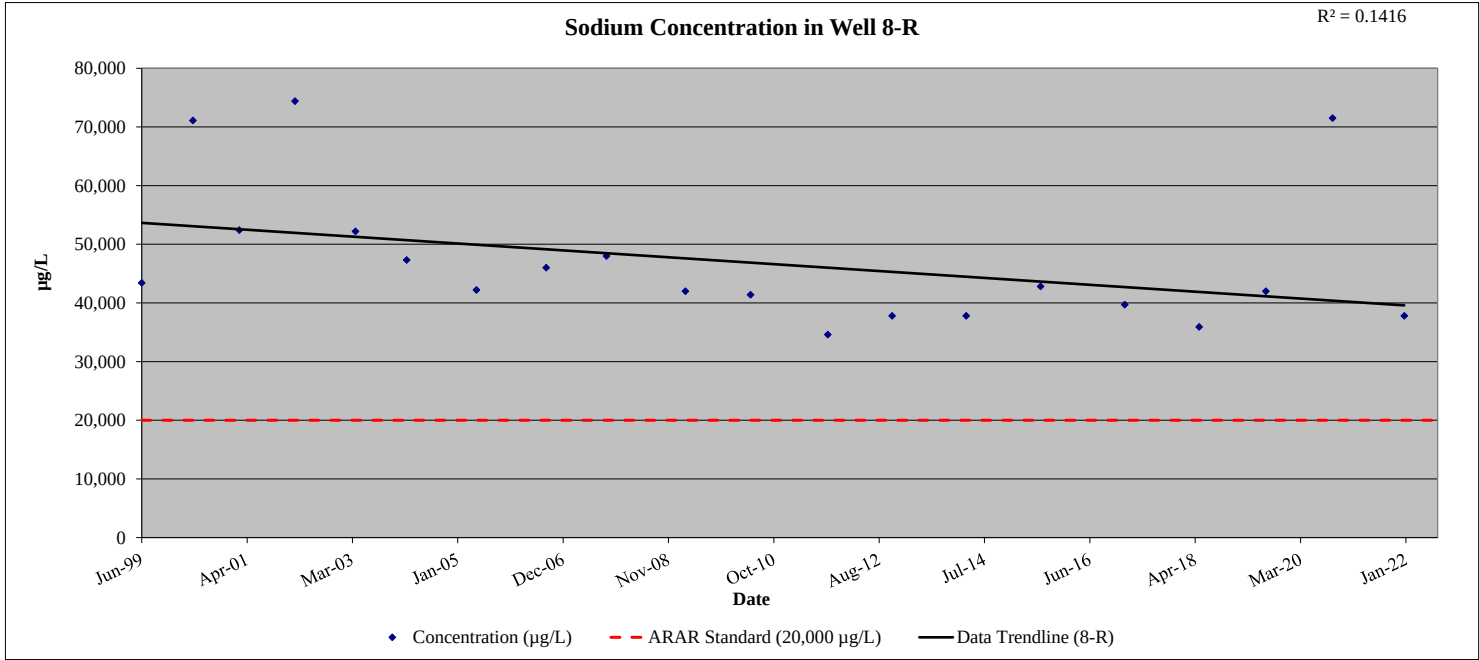
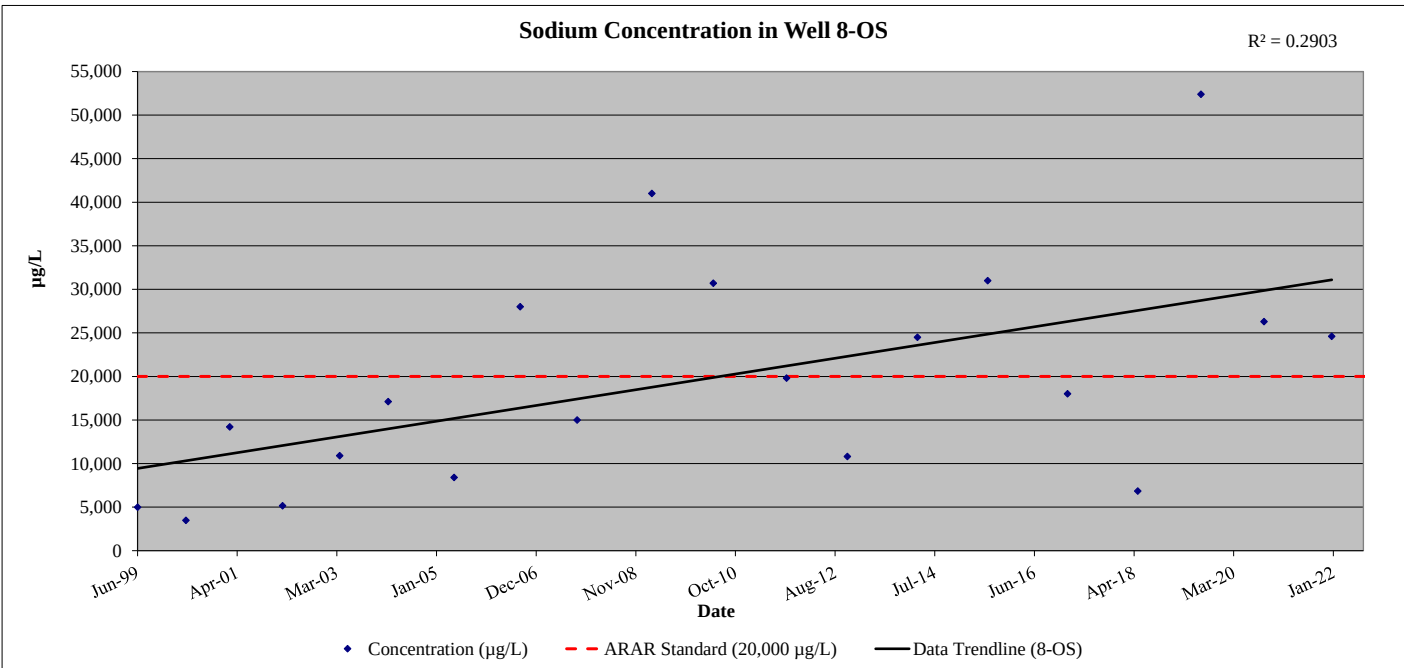
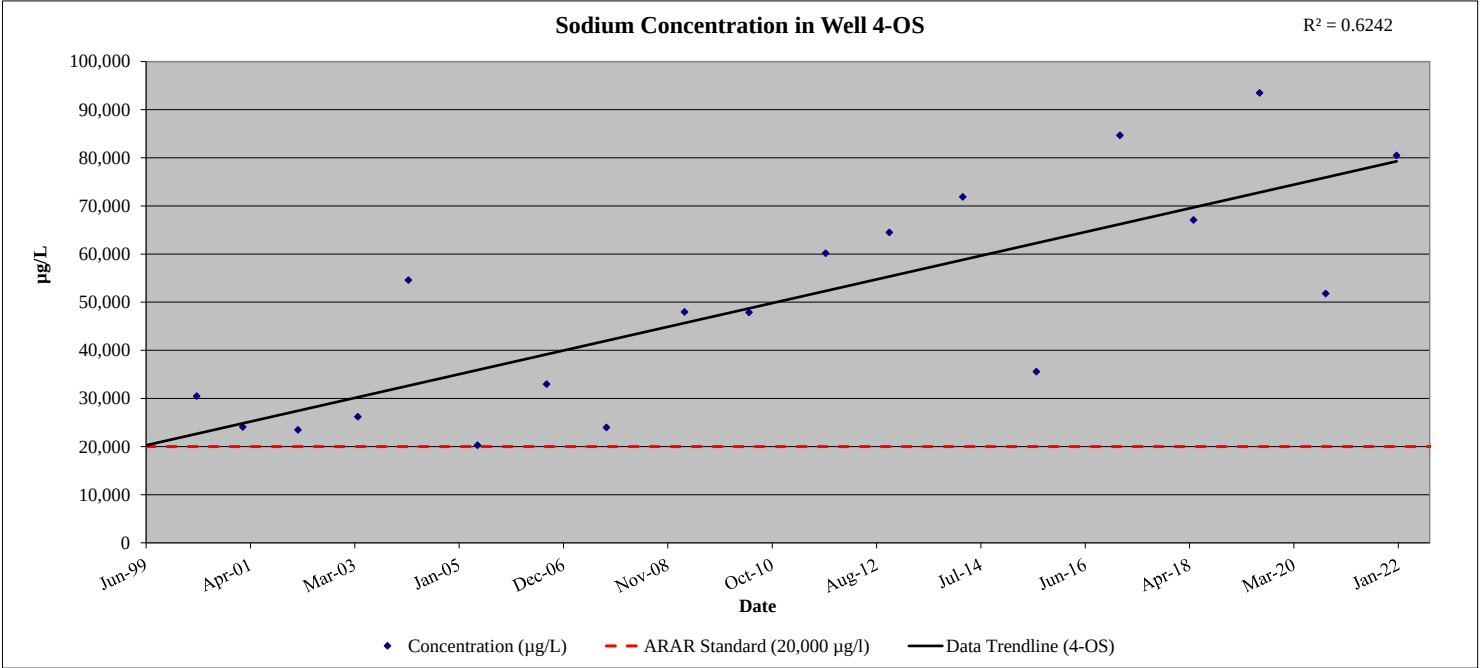


Table 18

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

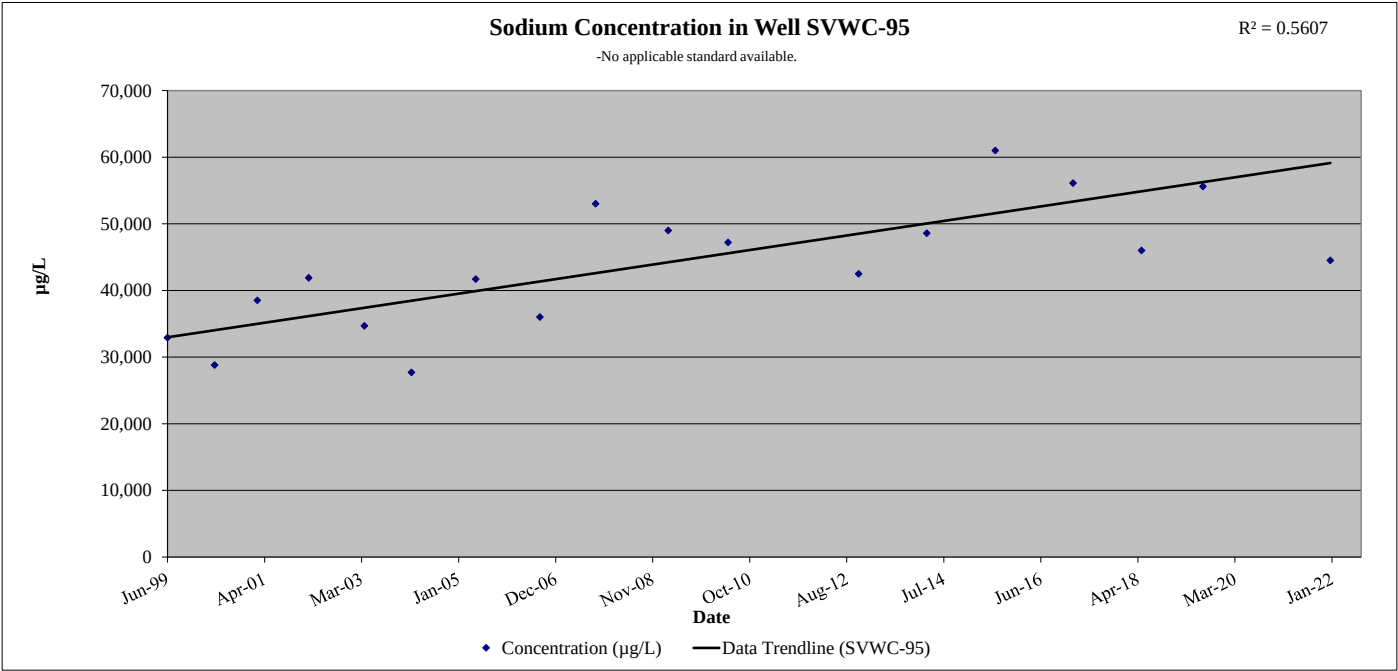
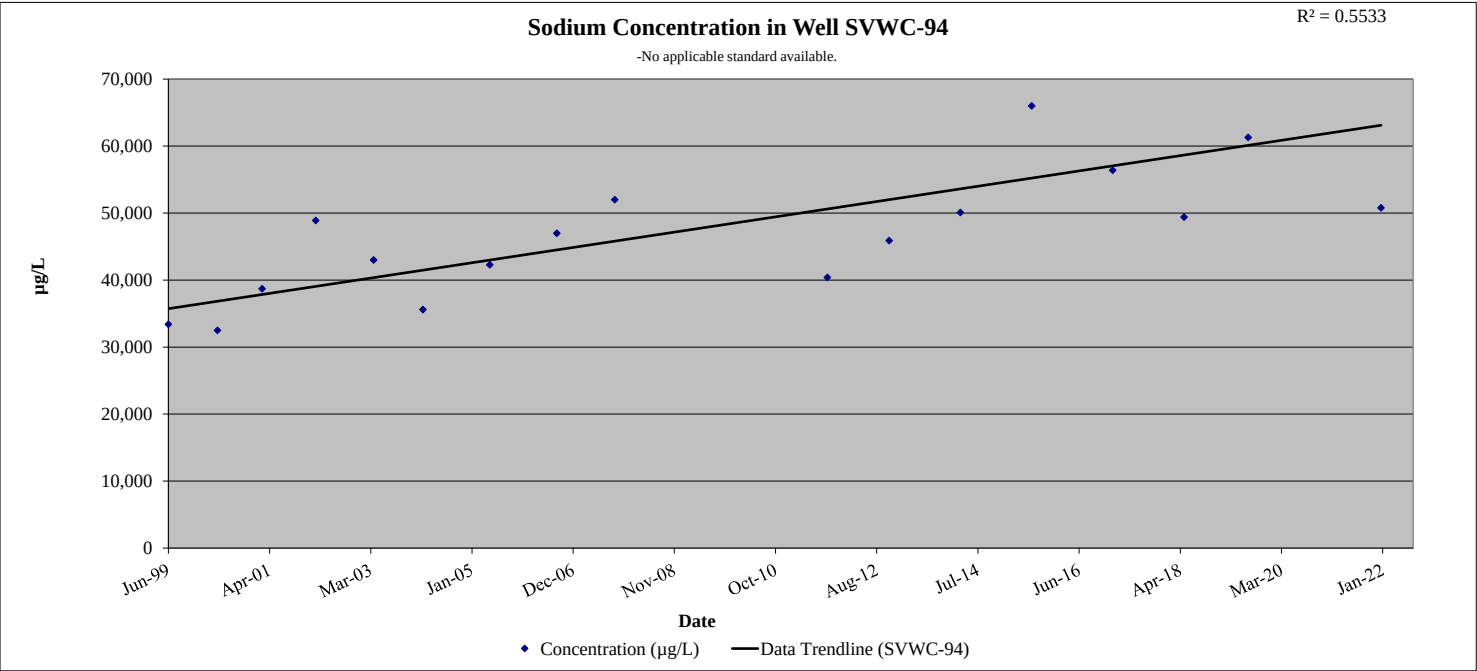
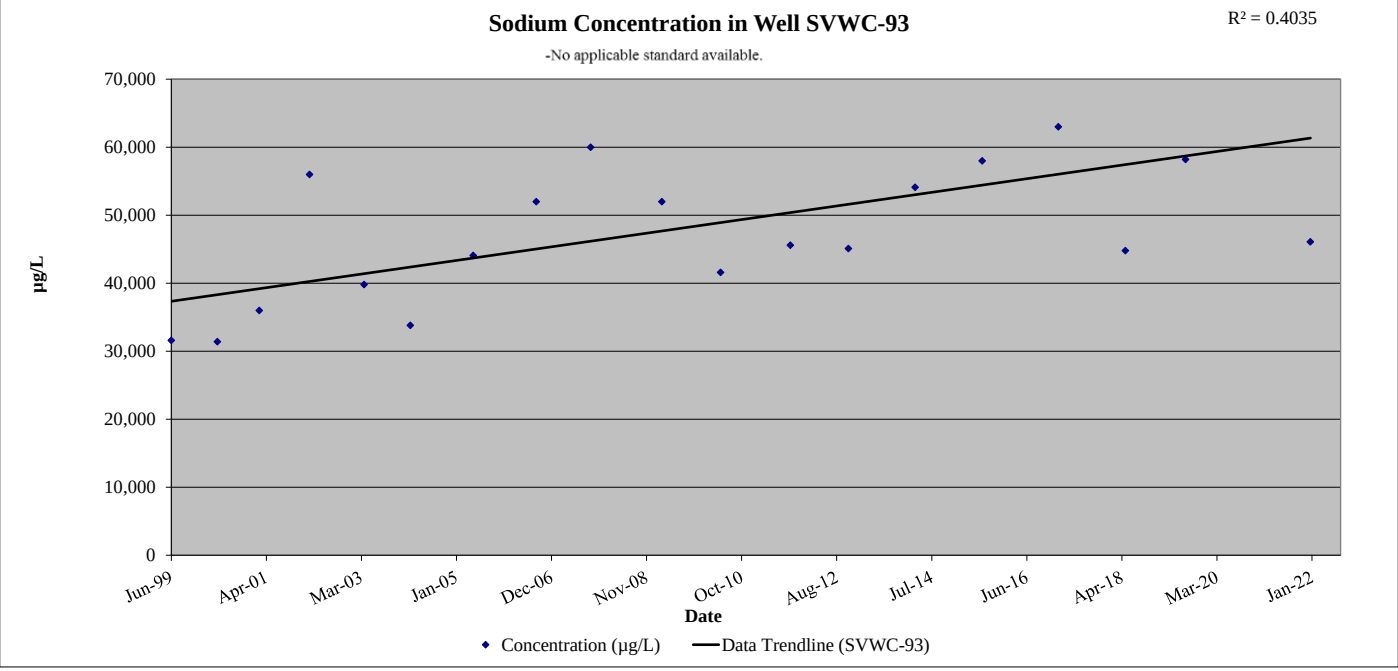
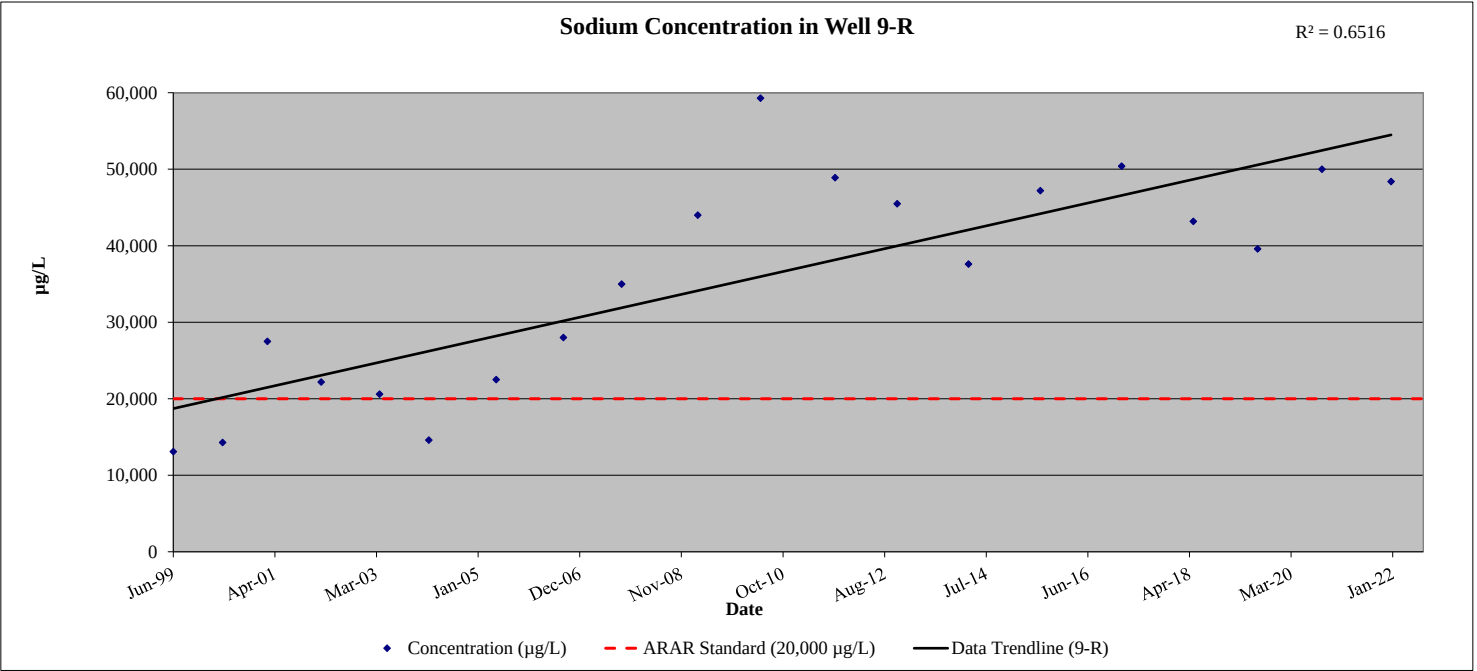


Table 18

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

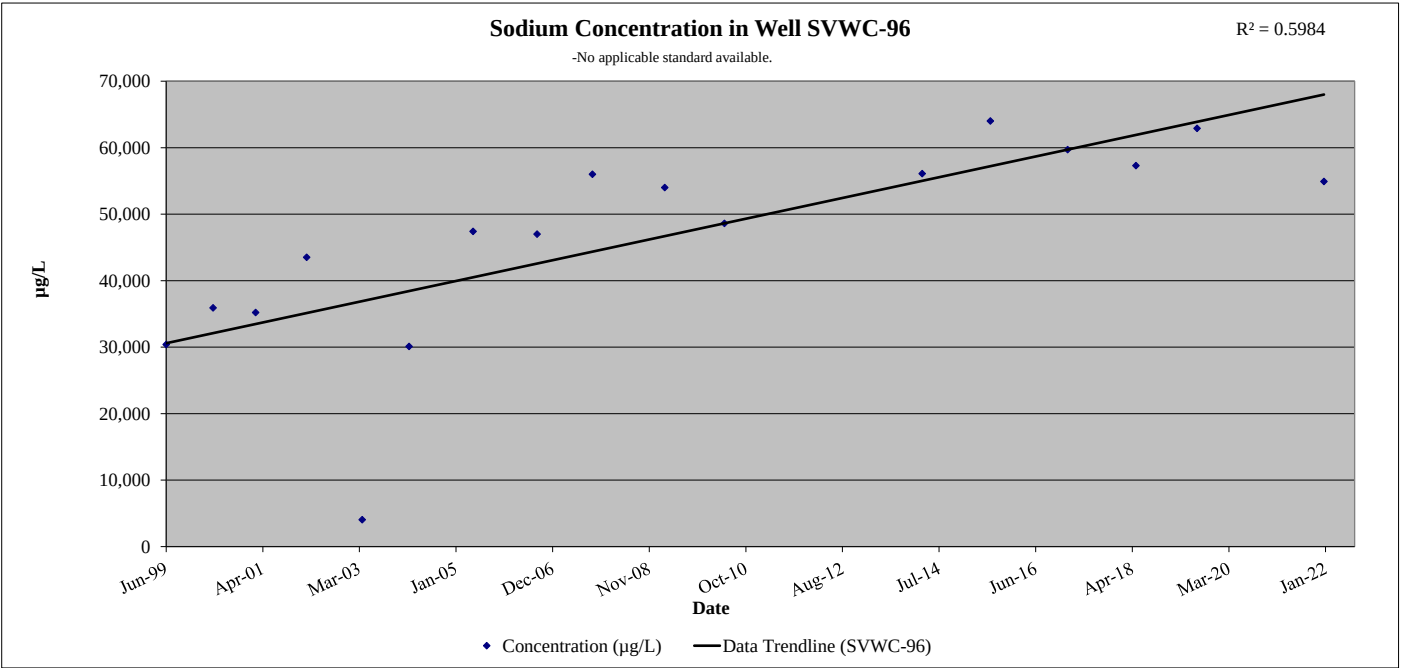


Table 19

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	NA	4.1 B	< 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	NA	< 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	NA	0.31 J	0.22 J	0.29 J	0.26 J	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	
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	
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	
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	
Jan-22	0.14 U	NA	0.14 U	NA	0.14 U	NA	0.14 U	NA	NA	NA	NA	0.14 U	NA	0.17 J	0.29 J	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 J	0.14 U	NA	0.1 U	0.1 U	0.14 U	0.14 U	0.16 J	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.

Table 19

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

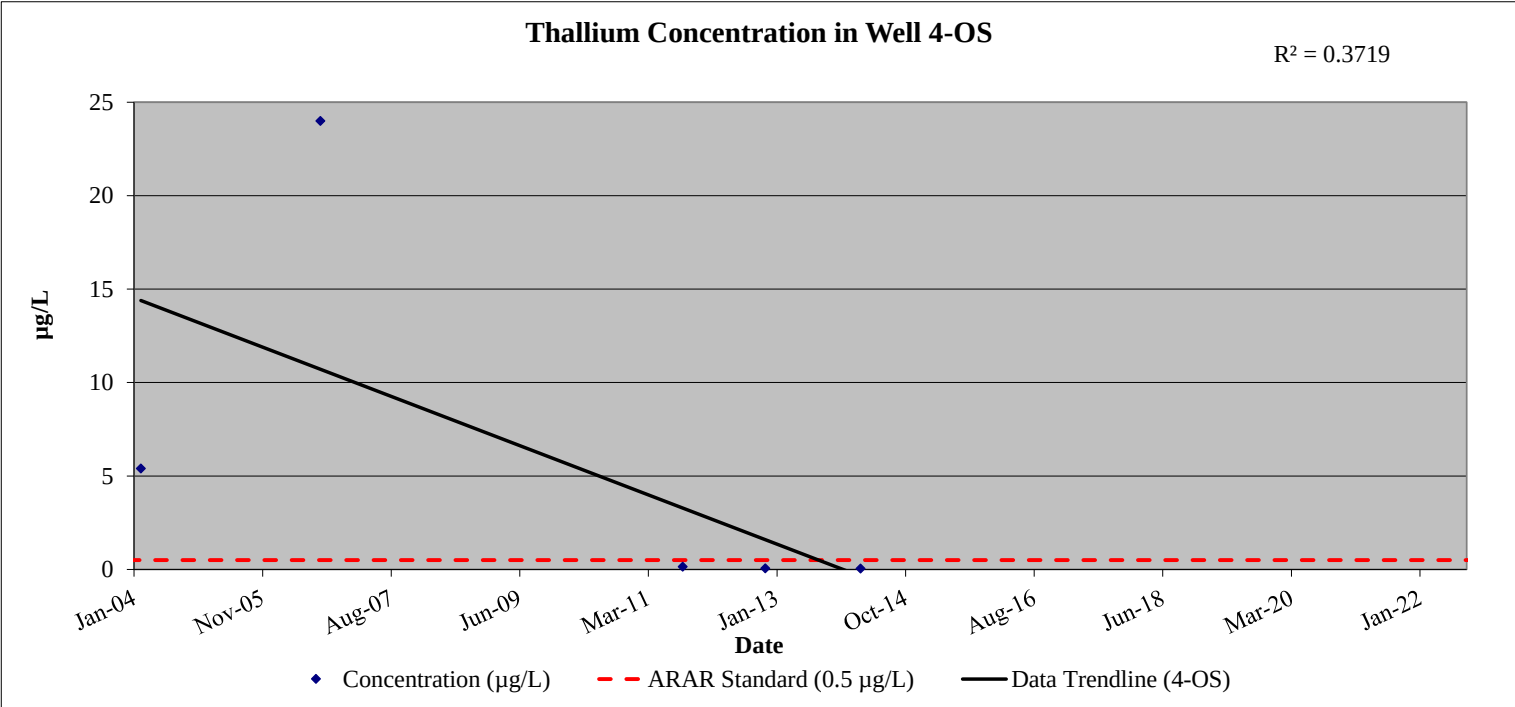
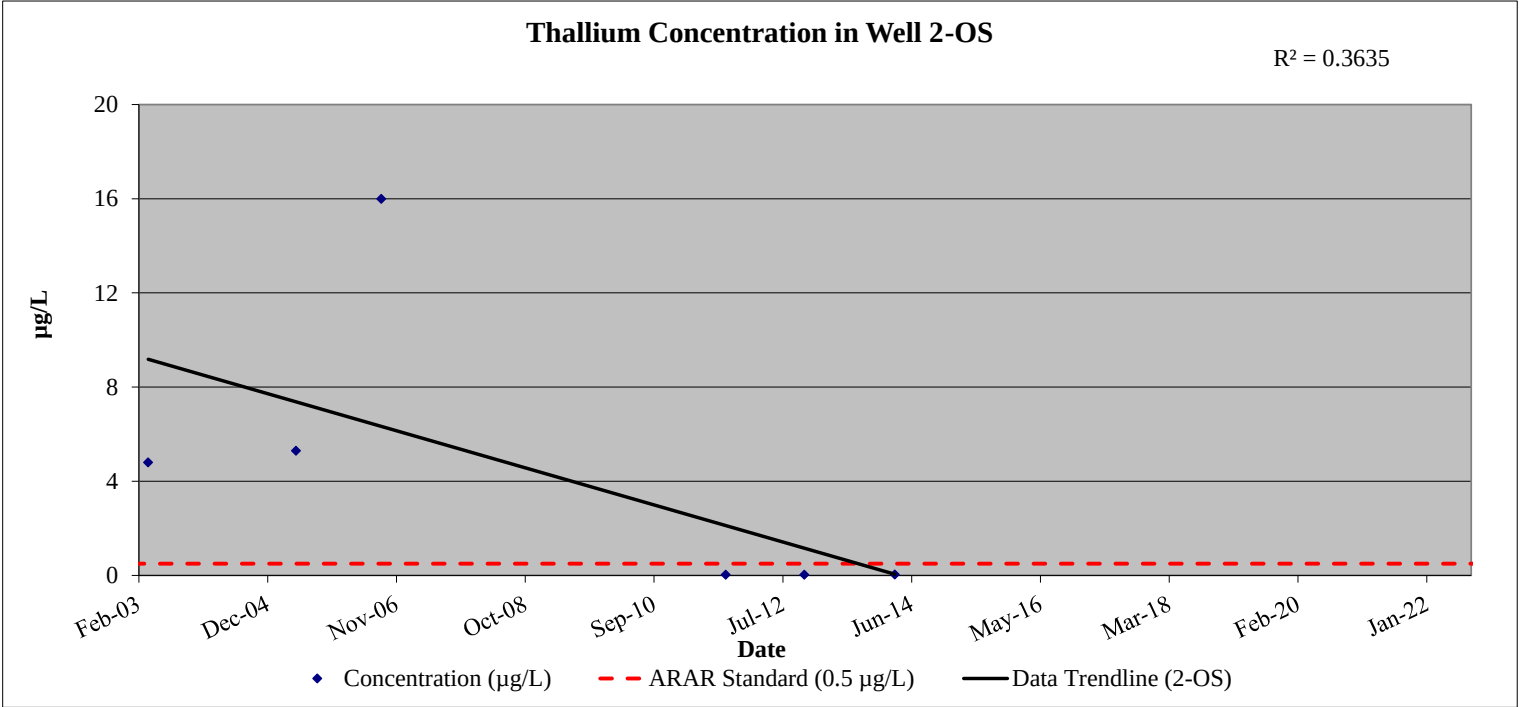
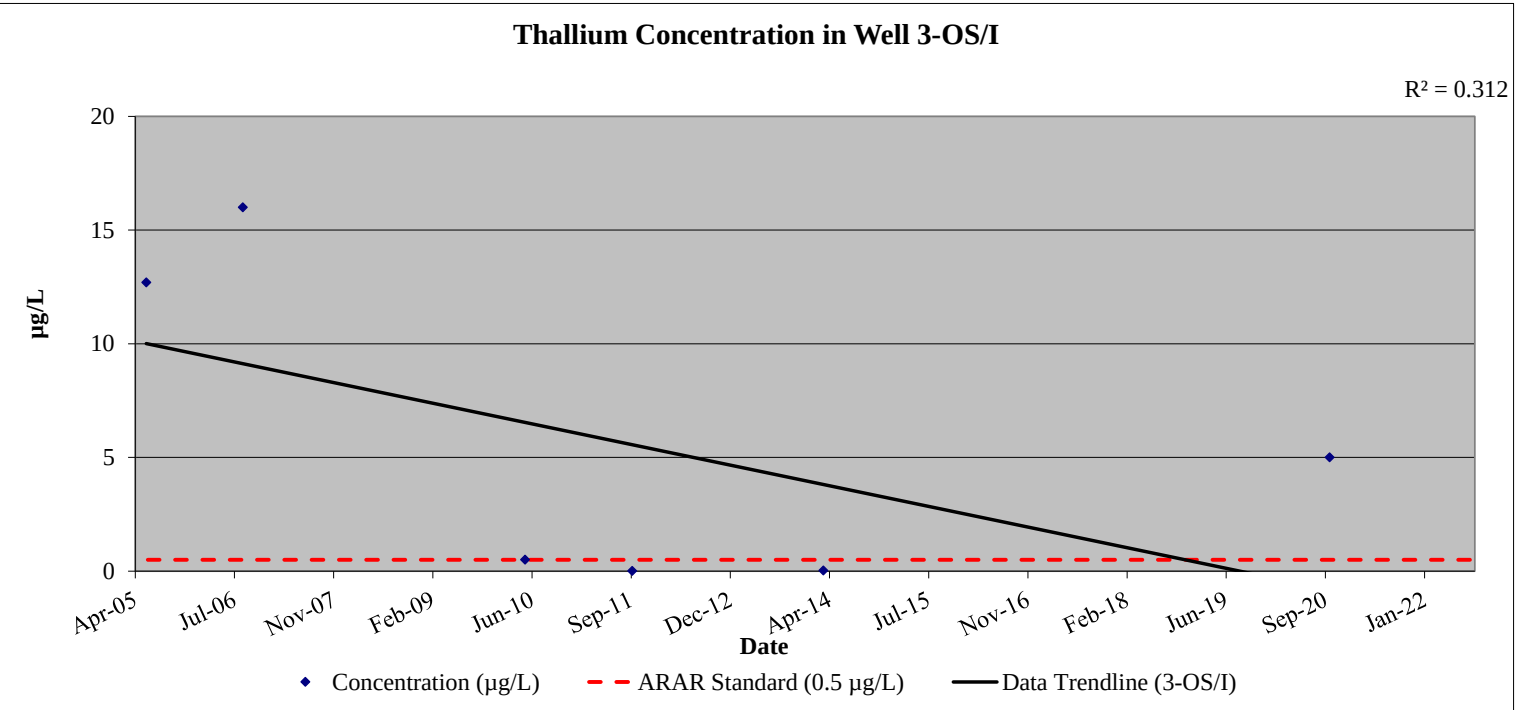
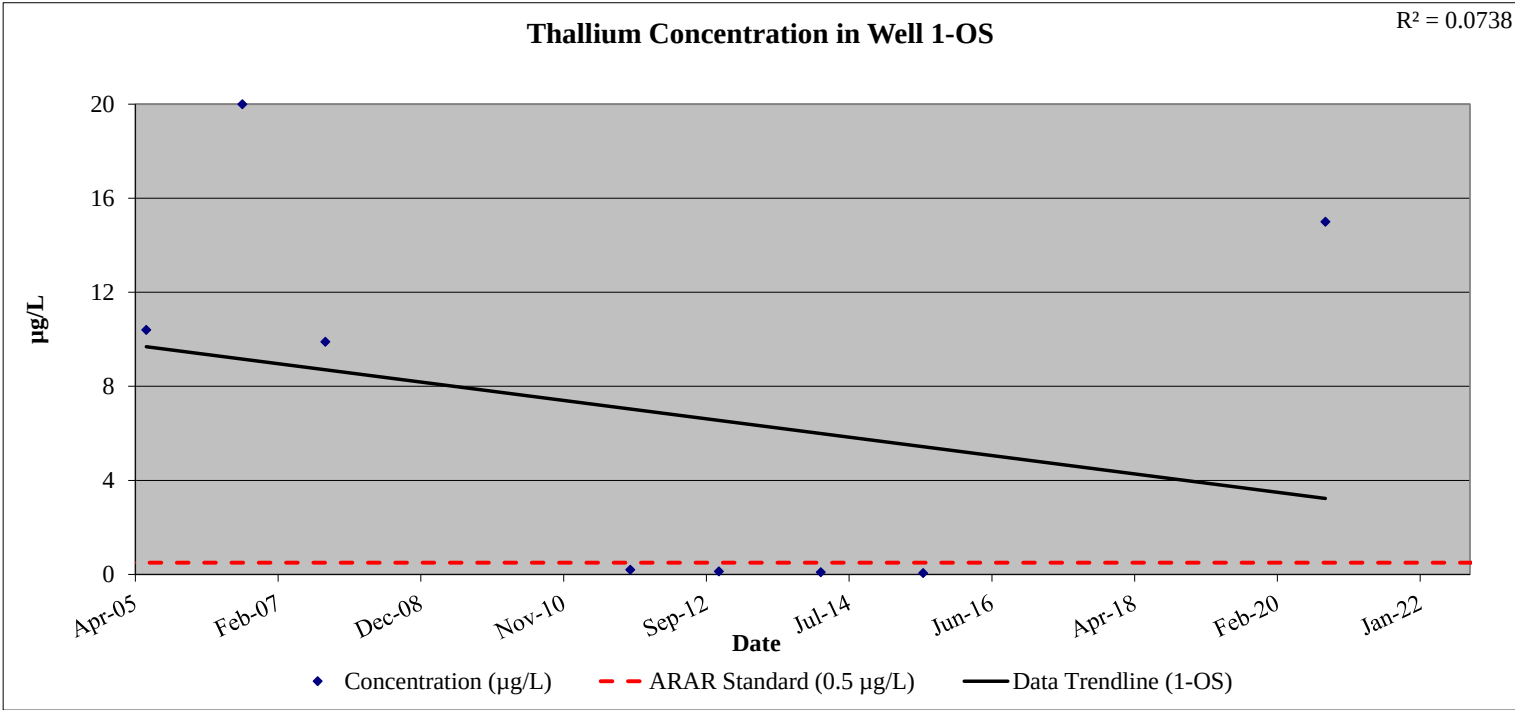
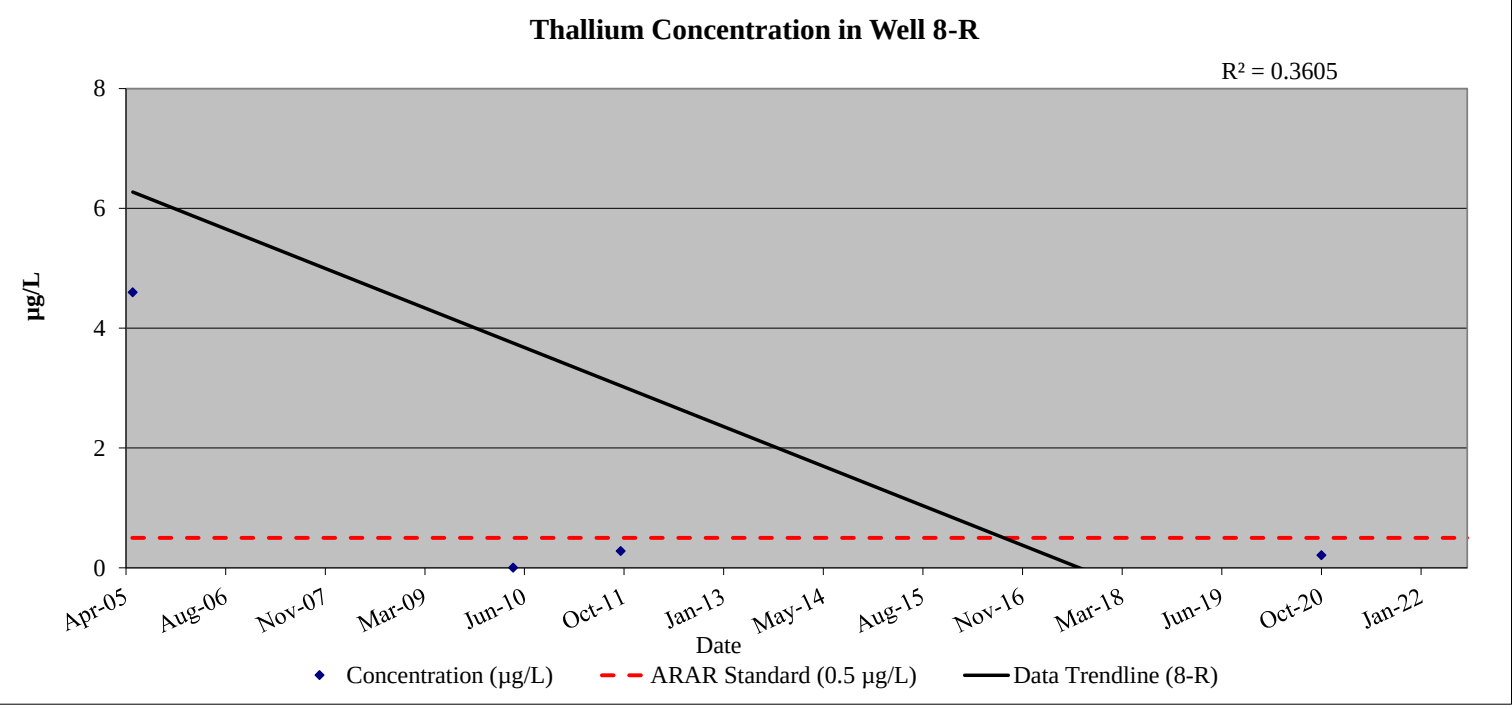
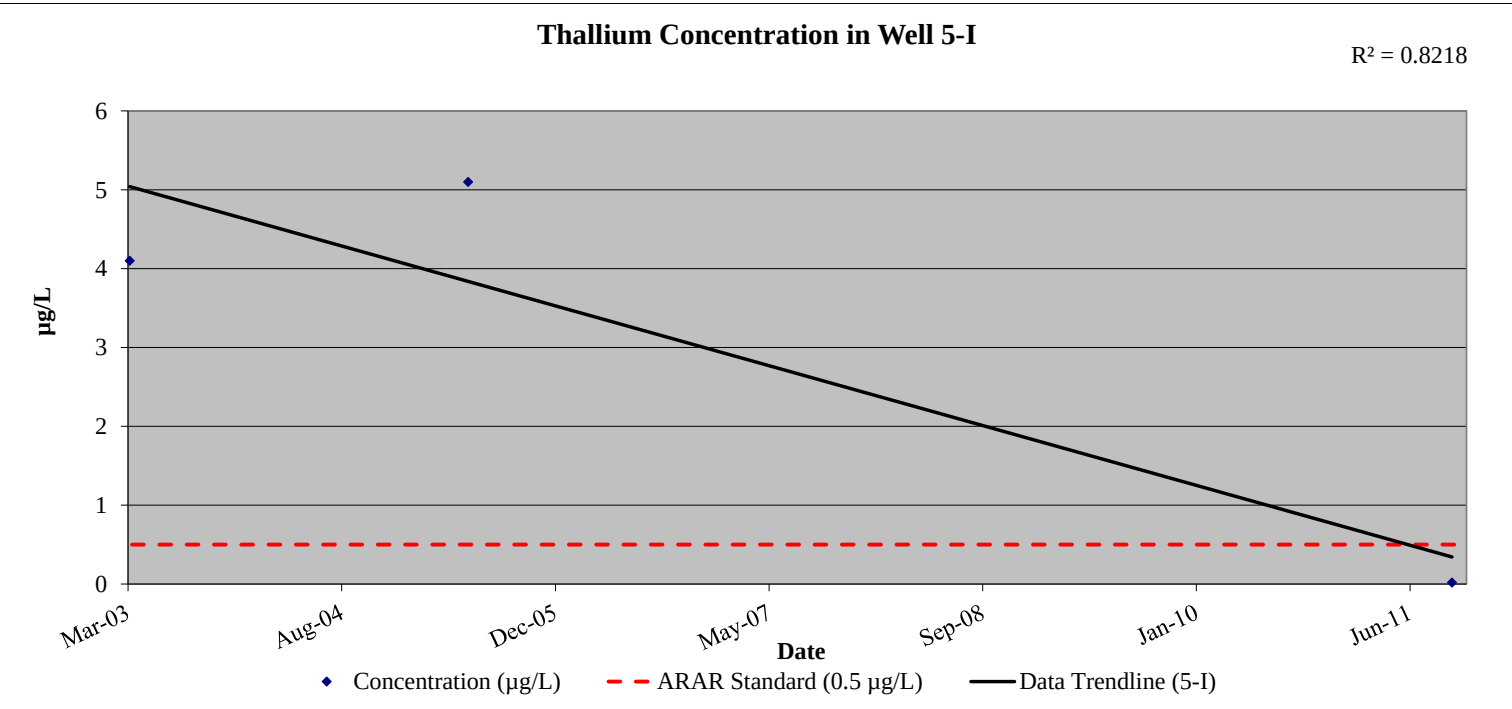
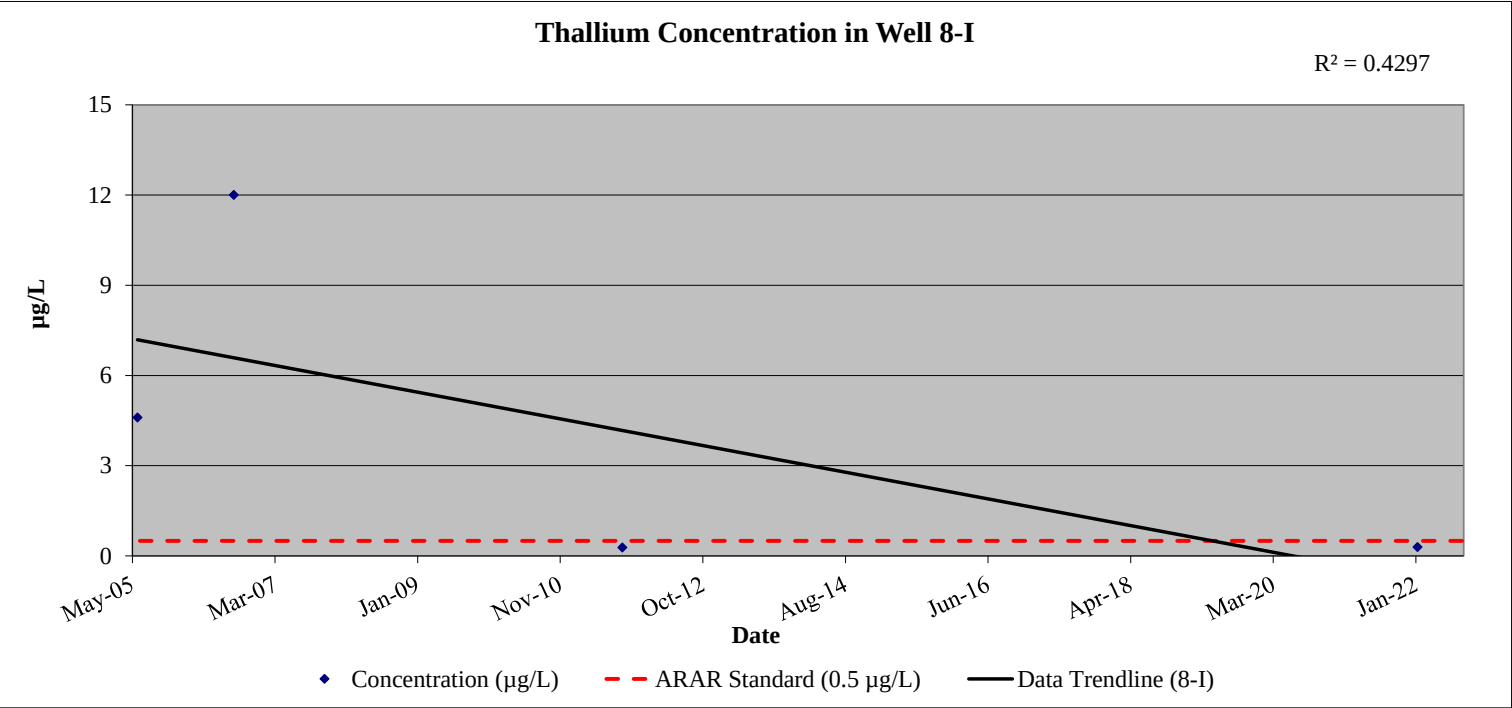
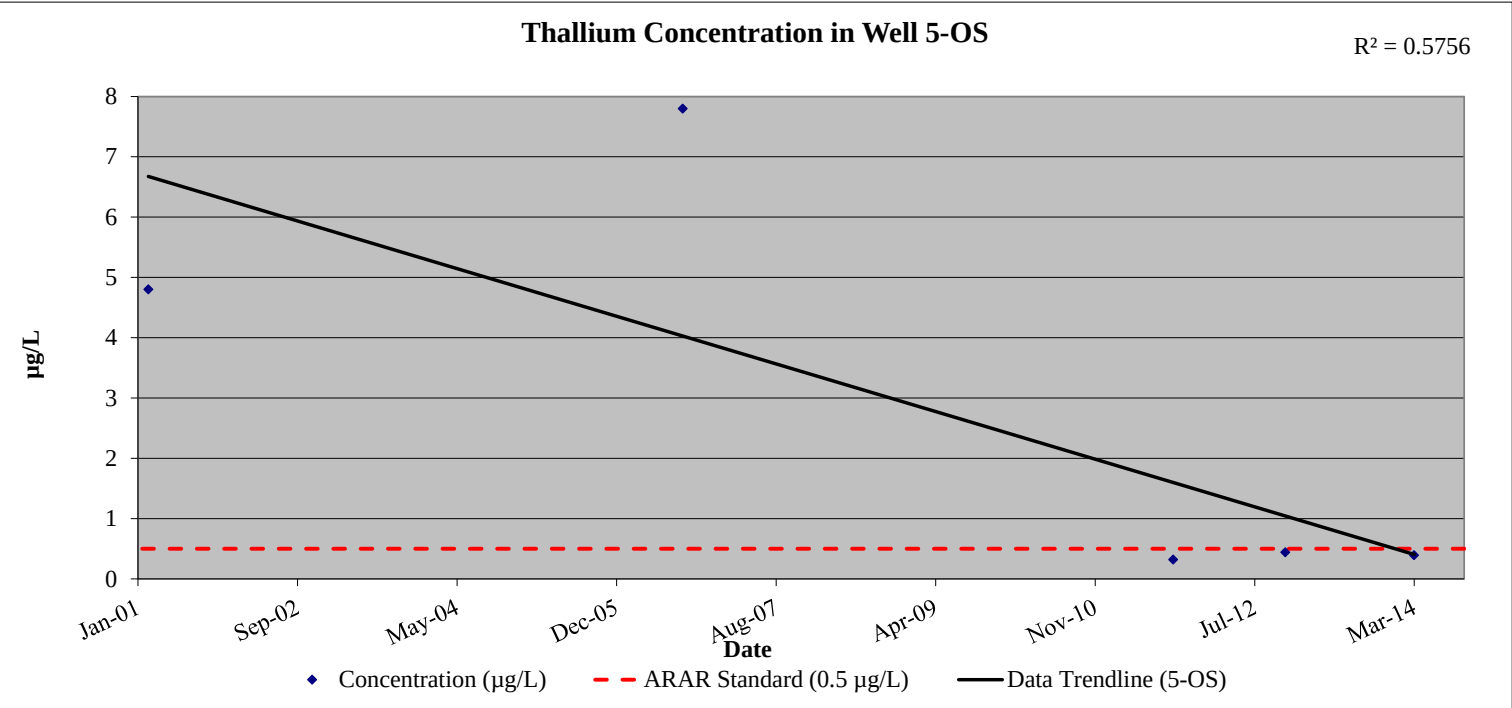


Table 19

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

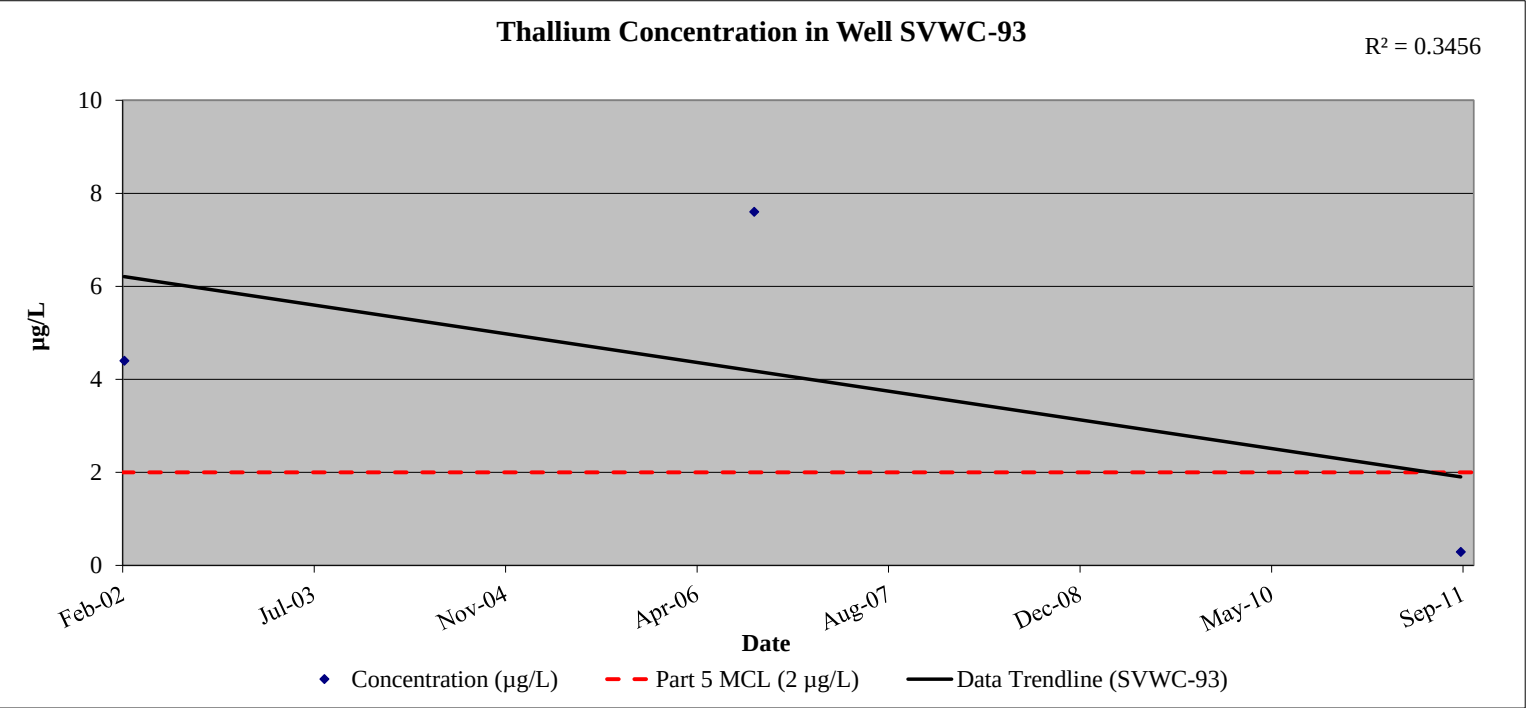
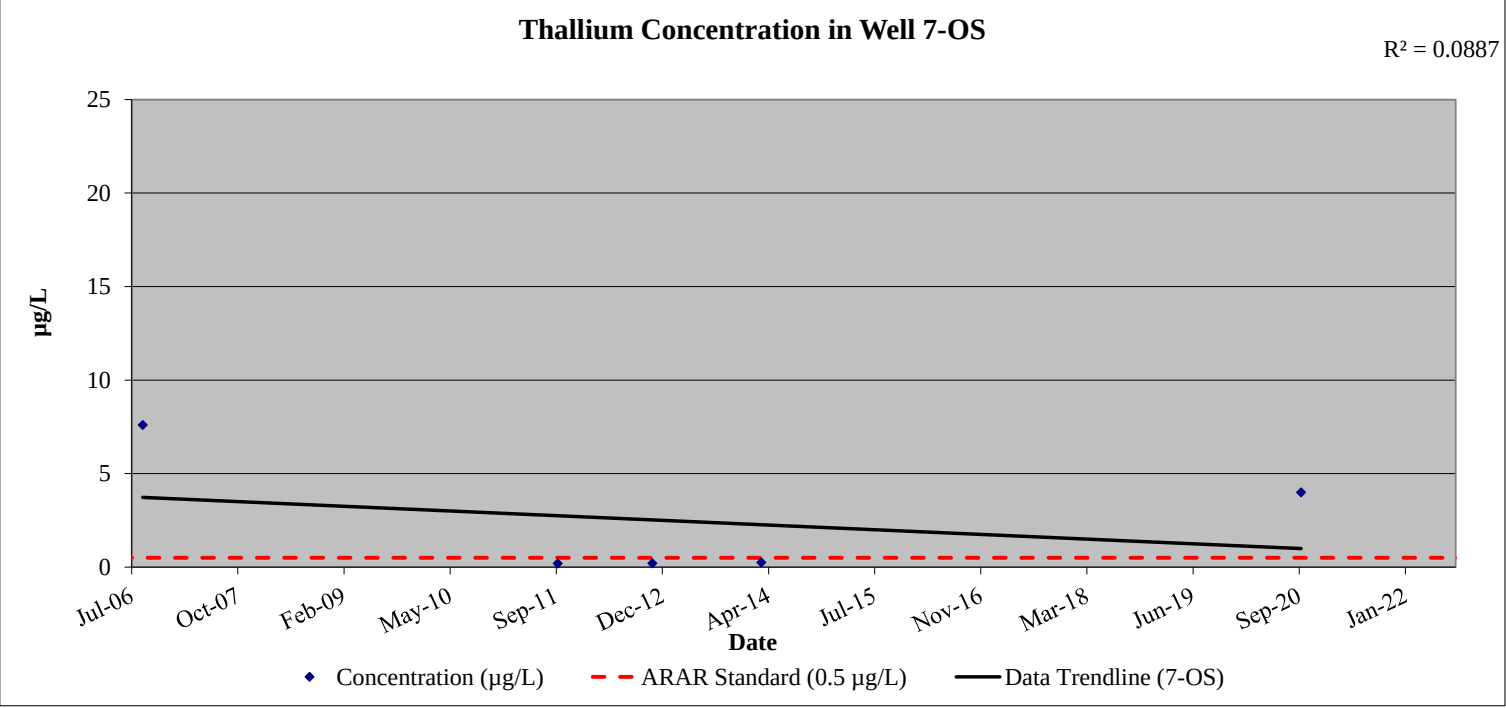


TABLE 20**Volume of Leachate/Groundwater Pumped from Landfill Extraction
Wells to RCSD #1 POTW****Town of Ramapo Landfill, Hillburn, New York**

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	11,822,370
2021	13,366,682

⁽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.

Table 21
Summary of Historical Leachate/Groundwater Analytical Results
Rockland County Sewer District #1 - Western Ramapo Treatment Plant
Sample Location: Manhole Immediately Upstream of Wet Well

Analyte	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
pH		S.U.	---	---	---	---	6.8	6.8	6.8	6.5	8.2	7.7	7.1	7.3
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
Chloride	-	ppm	160	180	130	200	257	123	92.6	90.8	148	4010	136	218
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
BOD	_(¹)	ppm	30	100	2	4	6	4	2	2	1	39	2	9
COD	-	ppm	161	576	35	43	55	52	20	9	---	2600	30	56
Suspended Solids	_(²)	ppm	24	74	5	2	20	7	3	6	6	72	6	6
TKN	-	ppm	530	380	2.2	1 U	3.4	1.47	1.59	4.06	1.02	1500	0.64	1.03
Total Dissolved Solids	-	ppm	2,300	950	480	720	1,500	504	312	366	504	958	511	628
O&G Non-Polar	25	ppm	1.4 U	1.4 U	1.4 U	5 U	0.6 U	6.30	---	---	---	---	---	---
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
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
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
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
Cadmium	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
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
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
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
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
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
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
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
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
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
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
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
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
Cyanide, Free	0.1	ppm	0.01	(³)	0.01 U	0.005	0.00468 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
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
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

Notes:

- = No maximum concentration is provided.

--- = Not sampled for.

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.

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Table 21
Summary of Historical Leachate/Groundwater Analytical Results
Rockland County Sewer District #1 - Western Ramapo Treatment Plant
Sample Location: Manhole Immediately Upstream of Wet Well

Analyte	Maximum Concentration	Units	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
pH		S.U.	7.6	7.5	7.3	7.2	8.2	7.2	7.3	6.8	6.4	6.5	6.8
Phosphorous (Total)	-	ppm	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
Chloride	-	ppm	97.4	263	201	267	165	294	194	177	201	180	70.1
Ammonia	-	ppm	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
BOD	_(¹)	ppm	12	3	4	3	2	12	13	3	3	7	24
COD	-	ppm	47	27	110	62	30	42	76	41	88	86	300
Suspended Solids	_(²)	ppm	4	5	7	16	4	4	18	12	4	13	14
TKN	-	ppm	2.25	0.35	0.35	1.61	0.41	3.23	2.82	79.5	2.49	0.61	1.02
Total Dissolved Solids	-	ppm	322	694	740	756	624	976	594	567	660	631	360
O&G Non-Polar	25	ppm	---	---	---	---	5 U	5 U	5 U	5 U	1.7 U	5 U	1.5 U
Antimony	-	ppm	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
Arsenic	0.25	ppm	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
Beryllium	-	ppm	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
Boron	1.0	ppm	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
Cadmimm	0.07	ppm	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
Chromium	0.6	ppm	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
Copper	1.0	ppm	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
Lead	1.0	ppm	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
Manganese	-	ppm	0.058	0.059	0.028 B	0.063	0.03 B	0.094	0.542	0.943	0.656	0.411	0.226
Mercury	0.05	ppm	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
Molybdenum	0.14	ppm	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
Nickel	1.0	ppm	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
Selenium	0.1	ppm	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
Silver	2.3	ppm	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
Thallium	-	ppm	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
Zinc	3.0	ppm	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
Cyanide Total	1.0	ppm	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
Cyanide, Free	0.1	ppm	---	---	---	---	---	---	0.01 U	0.01 U	0.05 U	---	---
Cyanide, Amenable	-	ppm	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
Phenol	2.25	ppm	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
USEPA Priority Pollutants ⁽⁴⁾	-	ppm	0.00701 J	0.00887 J	0.01294 J	0.00835 J	0.01653 J	0.00781	0.00176 J	0.001442 J	0.00739 J	0.00266 J	ND

Notes:

- = No maximum concentration is provided.

--- = Not sampled for.

B = The analyte was detected above the reporting limit in the associated m

J = Result is less than the reporting limit but greater than or equal to the m

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

ND = Not Detected.

Table 21
Summary of Historical Leachate/Groundwater Analytical Results
Rockland County Sewer District #1 - Western Ramapo Treatment Plant
Sample Location: Manhole Immediately Upstream of Wet Well

Analyte	Maximum Concentration	Units	10/17/18	05/15/19	09/18/19	02/19/20	10/07/20	04/14/21	07/21/21	10/20/21
pH		S.U.	7.2	6.4	6.9	6.45	6.16	6.77	6.54	7.33
Phosphorous (Total)	-	ppm	0.546	3.92	0.351	0.85	0.021	0.059	0.020	0.076
Chloride	-	ppm	163	123	311	161	133	118	165	160
Ammonia	-	ppm	2.27	0.28	0.06	0.17	1.1	1.21	0.706	1.33
BOD	_(⁽¹⁾)	ppm	15	2	1	1.5	4	5	6	4
COD	-	ppm	39	35	41	32	32	22	21	36
Suspended Solids	_(⁽²⁾)	ppm	19	2	1.0 U	1.0 U	2	3	2	4
TKN	-	ppm	2.84	0.48	0.21	0.37	1.54	1.30	0.828	1.36
Total Dissolved Solids	-	ppm	590	470	890	540	767	517	530	552
O&G Non-Polar	25	ppm	1.7 U	1.9 U	4.0 U	4.0 U	5.1 U	5 U	5 U	5 U
Antimony	-	ppm	0.003 U	0.003 U	0.003 U	0.02 U	0.002 U	0.002 U	0.002 U	0.006 U
Arsenic	0.25	ppm	0.002 U	0.002 U	0.002 U	0.01 U	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	-	ppm	0.001 U	0.001 U	0.001 U	0.004 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	1.0	ppm	0.03 U	0.09	0.12	0.22	0.221	0.105	0.126	0.14
Cadmimm	0.07	ppm	0.001 U	0.009	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	0.6	ppm	0.011 U	0.011 U	0.011 U	0.005 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	1.0	ppm	0.032	0.01 U	0.01 U	0.01 U	0.0137	0.0116	0.0972	0.00745
Lead	1.0	ppm	0.016 U	0.016 U	0.016 U	0.0082	0.002 U	0.002 U	0.002 U	0.002 U
Manganese	-	ppm	1.31	0.383	0.08	0.27	0.384	0.342	0.00204	0.434
Mercury	0.05	ppm	0.001 U	0.001 U	0.001 U	0.0002 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Molybdenum	0.14	ppm	0.003 U	0.003 U	0.003 U	0.02 U	0.002 U	0.002 U	0.002 U	0.002 U
Nickel	1.0	ppm	0.01 U	0.01 U	0.087	0.02 U	0.00333	0.00344	0.002 U	0.00284
Selenium	0.1	ppm	0.005 U	0.005 U	0.005 U	0.02 U	0.006 U	0.006 U	0.006 U	0.006 U
Silver	2.3	ppm	0.01 U	0.01 U	0.01 U	0.004 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	-	ppm	0.033 U	0.033 U	0.033 U	0.02 U	0.002 U	0.002 U	0.002 U	0.002 U
Zinc	3.0	ppm	0.04	0.019	0.01 U	0.02 U	0.03 U	0.003 U	0.334	0.0346
Cyanide Total	1.0	ppm	0.01 U	0.002 U	0.013	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cyanide, Free	0.1	ppm	---	---	---	---	---	---	---	---
Cyanide, Amenable	-	ppm	0.010 U	0.005 U	0.012	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Phenol	2.25	ppm	0.015 U	0.015 U	0.015 U	0.015 U	0.05 U	0.05 U	0.05 U	0.05 U
USEPA Priority Pollutants ⁽⁴⁾	-	ppm	ND	0.00615 J	0.00858 J	ND	0.00703	ND	0.00371 J	0.00141 J

Notes:

- = No maximum concentration is provided.

--- = Not sampled for.

B = The analyte was detected above the reporting limit in the associated m

J = Result is less than the reporting limit but greater than or equal to the m

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

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: 1/20/2022

Inspected By: Paul Scholar and Tim Clark – 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, 8, 11, 13, 16, 19, and 21). 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		One (1) damaged gas vent and one (2) angled gas vents (see Photographs 4, 5 and 6) 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

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION
REGION 3/SOLID WASTE PROGRAM
ANNUAL POST-CLOSURE MONITORING & MAINTENANCE REPORT
FOR LANDFILLS**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
REGION 3/SOLID WASTE PROGRAM
ANNUAL POST-CLOSURE MONITORING & MAINTENANCE REPORT FOR LANDFILLS

This report form provides a standard format for owners of closed municipal solid waste landfills to report to the Department regarding post-closure monitoring and maintenance activities which have occurred during the past year. Use of this form will ensure that information needed by the operator and Department staff is readily available. Reporting of non-essential information is avoided. By completing and submitting this form on an annual basis, all reporting requirements connected with the closed landfill are satisfied and there is no need to submit any additional reports or paperwork. This form should be submitted once per year on a schedule which coincides with completion of the annual or fourth quarter groundwater monitoring event.

SECTION A - FACILITY DATA

1. REPORTING PERIOD (mm/dd/yy to mm/dd/yy): November 1, 2020 through January 31, 2022
2. OWNER OF LANDFILL: Town of Ramapo
3. ADDRESS OF LANDFILL: 250 Torne Valley Road
Hillburn, New York 10931
4. LOCATION OF LANDFILL: County: Rockland Municipality: Town of Ramapo
5. CONTACT PERSON: Name: Mike Sadowski Address: 237 Route 59
Phone: (845) 357-5100 Suffern, NY 10901
6. SIZE OF LANDFILL (Acres): 86.07
7. PERIOD OF OPERATION (Yr to Yr): 1950s - 1989
8. DATE OF COMPLETION OF CLOSURE CONSTRUCTION (mm/yy): September 30, 1997
9. TYPE OF LANDFILL CAP (check one): ☒ Geomembrane ☐ Clay ☐ Composite
☐ Other – Specify: _____
10. LANDFILL GAS MANAGEMENT (Check all that apply): ☒ Passive Venting ☐ Flares
☐ Gas Filter ☐ Gas Collection ☐ Power Generation ☐ Other- Specify: _____
11. LEACHATE MANAGEMENT: Does the landfill have a leachate collection system? ☒ Y ☐ N
12. DATE OF CLOSURE CERTIFICATION (mm/dd/yy): December 1998
13. NAME OF CERTIFYING ENGINEER: URS Greiner, Inc.

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14. GRANTED REGULATORY RELIEF VARIANCES (Check all that apply): ☐ Topsoil Layer
☐ Barrier Layer ☐ Barrier Protection Layer ☐ Gas Vent Layer I ☐ Gas Vent Layer II
☒ Post Closure Monitoring I ☐ Post Closure Monitoring II

15. DATE OF LAST MOWING OF VEGETATIVE COVER: Fall 2021

SECTION B - LANDFILL INSPECTION

1. DATE OF LAST INSPECTION (mm/dd/yy): 1/20/2022

2. NAME(S) OF INSPECTOR(S): Paul Scholar and Tim Clark, Sterling Environmental Engineering, P.C.

3. Was entire landfill surface and entire landfill perimeter inspected? ☒ Y ☐ N; If no, describe extent of inspection:

4. Was the entire landfill surface covered with suitable vegetation (e.g. shallow rooting) and free of soil erosion? ☒ Y ☐ N; If no, identify problems identified and corrective actions taken or planned:

5. Were active leachate discharges, iron-stained surface soils or other signs of leachate breakouts noted? ☐ Y ☒ N; If yes, describe the nature of the problem and corrective actions taken or planned:

6. Were areas of surface water ponding observed on the landfill surface? ☐ Y ☒ N; If yes, describe the nature of the problem and corrective actions taken or planned:

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7. Were odors detected on or in the vicinity of the landfill? ____ Y **X** N; If yes, describe the nature of the problem and corrective actions taken or planned:

8. Were vectors or evidence of vectors observed? ____ Y **X** N; If yes, describe the nature of the problem and corrective actions taken or planned:

9. Was damage to the landfill cover system, gas vents, monitoring wells, leachate collection system or other landfill components observed? **X** Y ____ N; If yes, describe the nature of the problem and corrective actions taken or planned:

One (1) damaged gas vent and two (2) angled gas vents (Figure 7 and Photographs 4, 5, and 6, Appendix C) were observed across the Landfill. Overgrown vegetation was observed surrounding several gas vents. Overgrown vegetation is present in many of the drainage channels along the perimeter of the Landfill (Figure 7 and Photographs 1, 3, 7, 8, 11, 13, 16, 19, and 21, Appendix C).

10. Were there signs of dumping, ruts caused by vehicle tires, camp fires, or other signs of unauthorized public access or encroachment? ____ Y **X** N; If yes, describe the nature of the problem and corrective actions taken or planned:

11. Were any other problems noted in addition to those identified in items 4 through 10, above? ____ Y **X** N; If yes, describe the nature of the problem and corrective actions taken or planned:

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SECTION C - WATER QUALITY MONITORING

1. CURRENT WATER QUALITY MONITORING PROGRAM (Check One):

☐ Quarterly Routine/Annual Baseline ☐ Semi-Annual Baseline ☐ Annual Baseline
☒ Other - Specify: Modified Part 360 Baseline Parameters every fifth quarter

2. DATE OF MOST RECENT WATER QUALITY SAMPLING EVENT (mm/dd/yy): 1/18/2022
through 1/20/2022

3. INDICATE EACH SAMPLING EVENT COMPLETED DURING PAST YEAR AND ATTACH THE DATA SUMMARY SHEETS FOR EACH SAMPLING EVENT:

☒ 1st Quarter ☐ 2nd Quarter ☐ 3rd Quarter ☐ 4th Quarter

4. LIST AND DESCRIBE THE WATER QUALITY MONITORING POINTS INCLUDED IN THE PROGRAM BY COMPLETING THE TABLE BELOW:

ID Number	Description: Indicate whether the monitoring point is for groundwater or surface water, upgradient or downgradient, completed in overburden or bedrock, and, if part of a well couplet, shallow or deep
1-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow
2-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow
3-OS/I	Groundwater Monitoring Well, Downgradient, Overburden, Shallow/Intermediate
4-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow
7-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow
8-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow
8-I	Groundwater Monitoring Well, Downgradient, Overburden/Bedrock, Intermediate
8-R	Groundwater Monitoring Well, Downgradient, Overburden, Deep
9-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow
9-I	Groundwater Monitoring Well, Downgradient, Overburden/Bedrock, Intermediate
9-R	Groundwater Monitoring Well, Downgradient, Bedrock, Deep
10-OS	Groundwater Monitoring Well, Downgradient, Overburden, Shallow

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10-I	Groundwater Monitoring Well, Downgradient, Overburden/Bedrock, Intermediate
10-R	Groundwater Monitoring Well, Downgradient, Bedrock, Deep
UP-OS	Groundwater Monitoring Well, Upgradient, Overburden, Shallow
UP-I	Groundwater Monitoring Well, Upgradient, Overburden/Bedrock, Intermediate
UP-R	Groundwater Monitoring Well, Upgradient, Bedrock, Deep, NOT SAMPLED IN 2022

5. Using the following table, summarize each parameter detected during the reporting period, at a downgradient monitoring point, at a concentration exceeding the applicable water quality standard. (Include parameters which are undetected, if detection limit exceeds the standard.)

Sample Date	Sampling Point	Parameter	Units	Sample Result	Applicable Standard	Upgradient Results
		See attached Tables in 2022 Post-Closure Monitoring Report				

6. Do results of the most recent water quality monitoring event indicate an improvement or a worsening in water quality when compared with those of previous water quality monitoring events? ____ Y **X** N; If yes, describe change, attach graphs or tables if appropriate.

The 2022 data are consistent with prior results. See historic data plots for selected parameters in Tables 6 through 19 of the 2022 Post Closure Monitoring Report.

SECTION D - IMPACTED OR POTENTIALLY IMPACTED RESIDENTIAL WATER SUPPLY WELLS

1. Are there residences served by private water supply wells located less than one mile from the landfill in the downgradient direction and not separated from the landfill by an intervening perennial stream or other groundwater discharge zone? **X** Y ____ N;

Located at 20 and 1 Torne Brook Road in Hillburn, NY. Both are separated from the Landfill by Torne Brook but are sampled as part of the Landfill monitoring plan.

If yes, provide the information requested in items 2 through 5, below.

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2. Indicate the distance between the downgradient edge of the landfill and the nearest residential water supply well, in feet: Approximately 450 feet (1 Torne Brook Road).

3. Have residential wells been sampled to determine whether there has been landfill-water quality impact? X Y ___ N; If yes, provide the following information:

Date of most recent sampling event (mm/dd/yy): 1/19/2022 Number of wells tested: 2

Samples collected by: STERLING. Was the County Health Department notified? X Y ___ N

Parameters tested: Modified Part 360 Baseline

4. Using the following table, summarize each parameter detected during the reporting period, at a downgradient monitoring point, at a concentration exceeding the applicable drinking water standard. (Include parameters which are undetected, if detection limit exceeds the standard.)

Sample Date	Homeowner Name or Well ID	Parameter	Units	Sample Result	Applicable Standard
	(See Item 5, below)				

5. Explain cause of parameters exceeding standards, and if due to landfill-derived contamination, indicate what actions have been taken or are planned to mitigate water quality impact.

No parameter exceedances were reported for the January 19, 2022 sampling event. Refer to PCM Report.

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SECTION E - GAS MONITORING

1. Is landfill gas monitoring carried out at the landfill? ☒ Y ☐ N; If yes, provide the following information:

Type of monitoring (Check all that are applicable)

- ☐ Landfill perimeter survey using temporary boreholes
☐ Landfill perimeter survey using permanent gas monitoring wells
☐ Landfill gas vents within waste mass (as well as inspection for blockage)
☒ Interior survey of on-site and nearby structures
☐ Landfill final cover areas where stressed vegetation and/or fissures are evident
☐ Continuous automatic monitoring devices installed in buildings
☒ Other-Specify: Inside monitoring wells, leachate manhole A-5, lift stations A-10 and W-20, and along the Landfill perimeter

Frequency of Monitoring: ☐ Quarterly ☐ Semi-annual ☐ Annual ☒ Other-Specify: Every fifth quarter.

Date of Most Recent Monitoring Event (mm/dd/yy): 1/18/2022 through 1/20/2022 see Figure 3 of 2022 PCM Report. (Attach data sheet and site plan showing sampling locations)

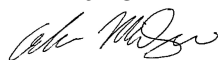
2. Have any explosive gas readings exceeding 25% of the lower explosive limit been detected during sampling events carried out during the past year? ☐ Y ☒ N; If yes, indicate whether the readings indicate a potential threat to public safety, what actions have been taken or are planned to mitigate potential safety concerns or the rationale for why corrective action is not needed.

SECTION F - CERTIFICATION OF ACCURACY

I certify that the information provided in this form is accurate and complete, to the best of my knowledge. I understand, that knowingly providing false information, may be grounds for enforcement action.

Andrew M. Millspaugh, P.E.

Name



Signature

Vice President, Sterling Environmental Engineering, P.C.

Title

03/29/2022

Date

APPENDIX C
PHOTOGRAPH LOG



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



Photograph 2: View of damaged upper portion of the concrete drainage vault (MH E-6) near the northern perimeter of the Landfill, looking southeast.



Photograph 3: View of well-established cover system and minor overgrown vegetation in drainage feature in the northern portion of the Landfill, looking southwest.



Photograph 4: View of leaning gas vent in the north central portion of the Landfill, looking southeast.



Photograph 5: View of leaning gas vent to the north of the firearms training building, looking south.



Photograph 6: View of damaged gas vent near the midwestern perimeter of the Landfill, looking south.



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



Photograph 8: View of slightly overgrown vegetation in drainage feature in west-central portion of the Landfill, looking southwest.



Photograph 9: View of shooting range along the mideastern perimeter of the Landfill, looking southeast.



Photograph 10: View of well-maintained cover system along the southeastern perimeter of the Landfill, looking southwest.



Photograph 11: View of drainage ditch along the southwestern perimeter of the Landfill, looking north-northeast.



Photograph 12: View of well-maintained cover system in the central portion of the Landfill, looking northeast.



Photograph 13: View of slightly overgrown vegetation in drainage feature along the mid-eastern perimeter of the Landfill, looking west.



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



Photograph 15: View of well-maintained cover system along the mideastern perimeter of the Landfill, looking west.



Photograph 16: View of debris build-up in drainage swale along the northeastern perimeter of the Landfill, looking south-southwest.



Photograph 17: View of well-maintained gabion retaining walls along the southwestern perimeter of the Landfill, looking north.



Photograph 18: View of cover system along the southwestern perimeter of the Landfill, looking north.



Photograph 19: View of slightly overgrown vegetation in drainage swale along the southeastern perimeter of the Landfill, looking north-northeast.



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



Photograph 21: View of overgrown vegetation in drainage feature along the southern perimeter of the Landfill, looking south.



Photograph 22: View of well-maintained cover system along the southern perimeter of the Landfill, looking west-northwest.

APPENDIX D

LABORATORY ANALYTICAL RESULTS - GROUNDWATER



ANALYTICAL REPORT

Lab Number:	L2202791
Client:	Sterling Environmental Engineering 24 Wade Road Latham, NY 12110
ATTN:	Andrew Millspaugh
Phone:	(518) 456-4900
Project Name:	RAMAPO LF
Project Number:	20010
Report Date:	02/01/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2202791-01	10-R	WATER	SUFFERN, NY	01/18/22 11:05	01/18/22
L2202791-02	9-R	WATER	SUFFERN, NY	01/18/22 14:45	01/18/22
L2202791-03	9-I	WATER	SUFFERN, NY	01/18/22 15:40	01/18/22
L2202791-04	9-OS	WATER	SUFFERN, NY	01/18/22 16:30	01/18/22
L2202791-05	10-I	WATER	SUFFERN, NY	01/18/22 12:15	01/18/22
L2202791-06	10-OS	WATER	SUFFERN, NY	01/18/22 13:20	01/18/22
L2202791-07	EB01182022	WATER	SUFFERN, NY	01/18/22 11:45	01/18/22
L2202791-08	DUP01182022	WATER	SUFFERN, NY	01/18/22 00:00	01/18/22
L2202791-09	TB01182022	WATER	SUFFERN, NY	01/18/22 00:00	01/18/22

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

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: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

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.

Perfluorinated Alkyl Acids by Isotope Dilution

L2202791-02: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

Total Metals

The WG1595911-4 MSD recovery, performed on L2202791-01, is outside the acceptance criteria for antimony (69%). A post digestion spike was performed and was within acceptance criteria.

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:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/01/22

ORGANICS

VOLATILES

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-01
 Client ID: 10-R
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 11:05
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 10:01
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	104		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-02
 Client ID: 9-R
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 14:45
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 10:21
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	108		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-03
 Client ID: 9-I
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 15:40
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 10:41
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	110		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-04
 Client ID: 9-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 16:30
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 11:01
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	110		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-05
 Client ID: 10-I
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 12:15
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 11:21
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	109		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-06
 Client ID: 10-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 13:20
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 11:41
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-08
 Client ID: DUP01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 00:00
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 12:01
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	109		70-130

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-09
 Client ID: TB01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 00:00
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 12:21
 Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	108		70-130

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/27/22 09:35
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-06,08-09 Batch: WG1598980-5					
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chlorobenzene	ND		ug/l	2.5	0.70
Benzene	ND		ug/l	0.50	0.16
Vinyl chloride	ND		ug/l	1.0	0.07

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06,08-09 Batch: WG1598980-3 WG1598980-4								
1,1-Dichloroethane	98		100		70-130	2		20
Chlorobenzene	98		98		75-130	0		20
Benzene	93		94		70-130	1		20
Vinyl chloride	94		98		55-140	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		94		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	102		104		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-06,08-09 QC Batch ID: WG1598980-6 WG1598980-7 QC Sample: L2202791-01 Client ID: 10-R												
1,1-Dichloroethane	ND	10	9.6	96		11	110		70-130	14		20
Chlorobenzene	ND	10	8.5	85		9.8	98		75-130	14		20
Benzene	ND	10	9.2	92		9.8	98		70-130	6		20
Vinyl chloride	ND	10	9.5	95		10	100		55-140	5		20

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		95		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	108		106		70-130
Toluene-d8	98		101		70-130

SEMIVOLATILES

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-01
 Client ID: 10-R
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 11:05
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 17:39
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	39			15-110		

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-01
 Client ID: 10-R
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 11:05
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 15:35
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.87	0.382	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.87	0.370	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.87	0.222	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.87	0.307	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.87	0.210	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.87	0.352	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.87	0.221	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.87	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.87	0.643	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.87	0.292	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.87	0.471	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.87	0.284	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.87	1.13	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.87	0.606	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.87	0.243	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.87	0.916	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.87	0.542	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.87	0.752	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.87	0.348	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.87	0.306	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.87	0.232	1
PFOA/PFOS, Total	ND		ng/l	1.87	0.221	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-01

Date Collected: 01/18/22 11:05

Client ID: 10-R

Date Received: 01/18/22

Sample Location: SUFFERN, 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		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	105		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	88		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	71		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	76		22-136

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-02
 Client ID: 9-R
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 14:45
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 18:47
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	3030		ng/l	134	30.3	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	43			15-110		

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-02
 Client ID: 9-R
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 14:45
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 16:25
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	28.5		ng/l	1.74	0.356	1
Perfluoropentanoic Acid (PFPeA)	6.98		ng/l	1.74	0.345	1
Perfluorobutanesulfonic Acid (PFBS)	3.52		ng/l	1.74	0.208	1
Perfluorohexanoic Acid (PFHxA)	7.39		ng/l	1.74	0.286	1
Perfluoroheptanoic Acid (PFHpA)	4.73		ng/l	1.74	0.196	1
Perfluorohexanesulfonic Acid (PFHxS)	2.38		ng/l	1.74	0.328	1
Perfluorooctanoic Acid (PFOA)	11.3		ng/l	1.74	0.206	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	0.600	1
Perfluorononanoic Acid (PFNA)	28.4		ng/l	1.74	0.272	1
Perfluorooctanesulfonic Acid (PFOS)	7.29		ng/l	1.74	0.440	1
Perfluorodecanoic Acid (PFDA)	0.269	J	ng/l	1.74	0.265	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.74	1.06	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.74	0.565	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.74	0.227	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.74	0.855	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.74	0.506	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.747	J	ng/l	1.74	0.701	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.74	0.324	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.74	0.285	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.74	0.216	1
PFOA/PFOS, Total	18.6		ng/l	1.74	0.206	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-02

Date Collected: 01/18/22 14:45

Client ID: 9-R

Date Received: 01/18/22

Sample Location: SUFFERN, 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			58-132		
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	89			62-163		
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96			70-131		
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	70			57-129		
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	76			60-129		
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100			71-134		
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82			62-129		
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	156		Q	14-147		
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	79			59-139		
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97			69-131		
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82			62-124		
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101			10-162		
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62			24-116		
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	85			55-137		
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40			10-112		
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64			27-126		
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76			48-131		
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68			22-136		

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-03
 Client ID: 9-I
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 15:40
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 19:08
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	134	30.3	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			44		15-110	

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-03
 Client ID: 9-I
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 15:40
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 16:42
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.49		ng/l	1.76	0.359	1
Perfluoropentanoic Acid (PFPeA)	1.50	J	ng/l	1.76	0.349	1
Perfluorobutanesulfonic Acid (PFBS)	1.95		ng/l	1.76	0.210	1
Perfluorohexanoic Acid (PFHxA)	2.22		ng/l	1.76	0.289	1
Perfluoroheptanoic Acid (PFHpA)	2.35		ng/l	1.76	0.198	1
Perfluorohexanesulfonic Acid (PFHxS)	0.849	J	ng/l	1.76	0.331	1
Perfluorooctanoic Acid (PFOA)	11.8		ng/l	1.76	0.208	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.76	1.17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.76	0.606	1
Perfluorononanoic Acid (PFNA)	1.69	JF	ng/l	1.76	0.275	1
Perfluorooctanesulfonic Acid (PFOS)	6.11		ng/l	1.76	0.444	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.76	0.268	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.76	1.07	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.76	0.571	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.76	0.229	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.76	0.863	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.76	0.511	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.76	0.708	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.76	0.328	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.76	0.288	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.76	0.218	1
PFOA/PFOS, Total	17.9		ng/l	1.76	0.208	1

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS****Lab ID:** L2202791-03**Date Collected:** 01/18/22 15:40**Client ID:** 9-I**Date Received:** 01/18/22**Sample Location:** SUFFERN, 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)	82				58-132	
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108				62-163	
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110				70-131	
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87				57-129	
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85				60-129	
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	112				71-134	
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89				62-129	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	93				14-147	
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89				59-139	
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106				69-131	
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92				62-124	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	84				10-162	
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68				24-116	
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96				55-137	
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45				10-112	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69				27-126	
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90				48-131	
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75				22-136	

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-04
 Client ID: 9-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 16:30
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 19:31
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	134	30.3	1
Surrogate			% Recovery	Qualifier	Acceptance Criteria	
1,4-Dioxane-d8			41		15-110	

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-04
 Client ID: 9-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 16:30
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 16:58
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.67		ng/l	1.77	0.362	1
Perfluoropentanoic Acid (PFPeA)	2.31		ng/l	1.77	0.351	1
Perfluorobutanesulfonic Acid (PFBS)	2.66		ng/l	1.77	0.211	1
Perfluorohexanoic Acid (PFHxA)	1.93		ng/l	1.77	0.291	1
Perfluoroheptanoic Acid (PFHpA)	1.64	J	ng/l	1.77	0.200	1
Perfluorohexanesulfonic Acid (PFHxS)	0.397	J	ng/l	1.77	0.333	1
Perfluorooctanoic Acid (PFOA)	3.23		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	0.610	1
Perfluorononanoic Acid (PFNA)	0.560	JF	ng/l	1.77	0.276	1
Perfluorooctanesulfonic Acid (PFOS)	2.23		ng/l	1.77	0.447	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	0.869	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.77	0.514	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.77	0.713	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.77	0.330	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	5.46		ng/l	1.77	0.209	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-04

Date Collected: 01/18/22 16:30

Client ID: 9-OS

Date Received: 01/18/22

Sample Location: SUFFERN, 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		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	90		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	105		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	60		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	87		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	39		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		22-136

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-05
 Client ID: 10-I
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 12:15
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:
 Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 19:53
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	45			15-110		

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-05
 Client ID: 10-I
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 12:15
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 17:15
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

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)	ND		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	0.327	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	0.598	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	0.563	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.74	0.226	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.74	0.852	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.74	0.504	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.74	0.699	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	0.216	1
PFOA/PFOS, Total	ND		ng/l	1.74	0.205	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-05

Date Collected: 01/18/22 12:15

Client ID: 10-I

Date Received: 01/18/22

Sample Location: SUFFERN, 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)	87		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	92		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	93		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	97		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	67		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	44		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	72		22-136

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-06
 Client ID: 10-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 13:20
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 20:15
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	45			15-110		

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-06
 Client ID: 10-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 13:20
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 17:31
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.214	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.620	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.281	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.454	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.584	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.234	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.883	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.523	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.725	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.335	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-06
 Client ID: 10-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 13:20
 Date Received: 01/18/22
 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)	87		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	104		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	96		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	81		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	52		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	73		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		22-136

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-07
 Client ID: EB01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 11:45
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 17:48
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.80	0.368	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.80	0.357	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.80	0.215	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.80	0.296	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.80	0.203	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.80	0.339	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.80	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.80	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.80	0.621	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.80	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.80	0.455	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.80	0.274	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.80	1.09	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.80	0.585	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.80	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.80	0.885	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.80	0.524	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.80	0.726	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.80	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.80	0.295	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.80	0.224	1
PFOA/PFOS, Total	ND		ng/l	1.80	0.213	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-07

Date Collected: 01/18/22 11:45

Client ID: EB01182022

Date Received: 01/18/22

Sample Location: SUFFERN, 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)	101		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	120		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	102		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	103		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	105		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	112		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	102		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	86		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	103		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	74		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		22-136

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-08
 Client ID: DUP01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 00:00
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 20:37
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	55.3	J	ng/l	134	30.3	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	43			15-110		

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**SAMPLE RESULTS**

Lab ID: L2202791-08
 Client ID: DUP01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 00:00
 Date Received: 01/18/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/22/22 18:04
 Analyst: SG

Extraction Method: ALPHA 23528
 Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.48		ng/l	1.79	0.366	1
Perfluoropentanoic Acid (PFPeA)	1.49	J	ng/l	1.79	0.355	1
Perfluorobutanesulfonic Acid (PFBS)	1.91		ng/l	1.79	0.213	1
Perfluorohexanoic Acid (PFHxA)	2.07		ng/l	1.79	0.294	1
Perfluoroheptanoic Acid (PFHpA)	2.31		ng/l	1.79	0.202	1
Perfluorohexanesulfonic Acid (PFHxS)	0.788	J	ng/l	1.79	0.337	1
Perfluorooctanoic Acid (PFOA)	11.8		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)	1.72	JF	ng/l	1.79	0.280	1
Perfluorooctanesulfonic Acid (PFOS)	5.84		ng/l	1.79	0.452	1
Perfluorodecanoic Acid (PFDA)	ND		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	0.878	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.520	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	17.6		ng/l	1.79	0.211	1

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-08
 Client ID: DUP01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/18/22 00:00
 Date Received: 01/18/22
 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		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	97		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	105		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	90		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	69		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	68		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	77		22-136

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 01/24/22 16:32
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/20/22 17:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-06,08 Batch: WG1596404-1					
1,4-Dioxane	ND		ng/l	150	33.9

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

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID

Analytical Date: 01/22/22 12:00

Analyst: SG

Extraction Method: ALPHA 23528

Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-08 Batch: WG1596684-1					
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)	ND		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: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/22/22 12:00
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 01/21/22 10:40

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-08 Batch: WG1596684-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	103		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	91		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	116		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	95		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	86		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	63		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	78		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		22-136

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-06,08 Batch: WG1596404-2 WG1596404-3								
1,4-Dioxane	125		117		40-140	7		30

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

Lab Control Sample Analysis **Batch Quality Control**

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

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: WG1596684-2								
Perfluorobutanoic Acid (PFBA)	112		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	111		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	109		-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	112		-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	115		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	130		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	111		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	124		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	107		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	113		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	120		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	108		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	146		-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	131		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	112		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	121		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	112		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	115		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	115		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	124		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	112		-		59-182	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

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: WG1596684-2								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	95				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	85				70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	86				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	106				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	87				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	85				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	86				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	66				10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71				22-136

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

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 10-R Associated sample(s): 01-06,08 QC Batch ID: WG1596404-4 WG1596404-5 QC Sample: L2202791-01 Client ID:												
1,4-Dioxane	ND	4810	6230	130		6110	127		40-140	2		30

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	44		46		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

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): 01-08 QC Batch ID: WG1596684-3 WG1596684-4 QC Sample: L2202791-01 Client ID: 10-R												
Perfluorobutanoic Acid (PFBA)	ND	34.6	33.5	97		33.1	94		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	ND	34.6	33.2	96		33.1	94		63-161	0		30
Perfluorobutanesulfonic Acid (PFBS)	ND	30.7	28.9	94		28.4	91		65-157	2		30
Perfluorohexanoic Acid (PFHxA)	ND	34.6	33.8	98		33.7	96		69-168	0		30
Perfluoroheptanoic Acid (PFHpA)	ND	34.6	34.2	99		33.3	95		58-159	3		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	31.6	35.8	113		36.1	112		69-177	1		30
Perfluorooctanoic Acid (PFOA)	ND	34.6	32.6	94		32.8	93		63-159	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	33	36.5	111		36.3	108		49-187	1		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	33	32.0	97		31.7	95		61-179	1		30
Perfluorononanoic Acid (PFNA)	ND	34.6	33.3	96		34.5	98		68-171	4		30
Perfluorooctanesulfonic Acid (PFOS)	ND	32.1	35.8	111		35.2	108		52-151	2		30
Perfluorodecanoic Acid (PFDA)	ND	34.6	33.0	95		33.0	94		63-171	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	33.2	44.2	133		42.7	126		56-173	3		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	34.6	36.6	106		37.7	107		60-166	3		30
Perfluoroundecanoic Acid (PFUnA)	ND	34.6	32.8	95		35.2	100		60-153	7		30
Perfluorodecanesulfonic Acid (PFDS)	ND	33.4	35.3	106		35.4	104		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	ND	34.6	32.7	94		34.8	99		46-170	6		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	34.6	35.4	102		41.0	117		45-170	15		30
Perfluorododecanoic Acid (PFDoA)	ND	34.6	33.7	97		34.3	98		67-153	2		30
Perfluorotridecanoic Acid (PFTrDA)	ND	34.6	37.7	109		38.9	111		48-158	3		30
Perfluorotetradecanoic Acid (PFTA)	ND	34.6	34.0	98		36.4	103		59-182	7		30

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

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): 01-08 QC Batch ID: WG1596684-3 WG1596684-4 QC Sample: L2202791-01
 Client ID: 10-R

Surrogate (Extracted Internal Standard)	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83		94		10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	101		115		14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		72		27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	74		76		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		96		55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		96		62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	85		95		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	84		94		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		112		71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		91		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	75		71		22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		89		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		111		62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		42		10-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93		108		69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		98		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		94		59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		111		70-131

METALS

Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-01

Date Collected: 01/18/22 11:05

Client ID: 10-R

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0449		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Antimony, Total	0.00221	J	mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Barium, Total	0.00339		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Boron, Total	0.008	J	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 11:02	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Calcium, Total	8.20		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Chromium, Total	0.00795		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00032	J	mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Copper, Total	0.00092	J	mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Iron, Total	0.0697		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Magnesium, Total	1.71		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Manganese, Total	0.00594		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Mercury, Total	0.00016	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 13:22	EPA 7470A	1,7470A	NB
Nickel, Total	0.00281		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Potassium, Total	0.616		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Sodium, Total	3.70		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Zinc, Total	0.00986	J	mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	27.51		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 15:49	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-02

Date Collected: 01/18/22 14:45

Client ID: 9-R

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0420		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00038	J	mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Barium, Total	0.02066		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Boron, Total	0.076		mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 10:53	EPA 3005A	19,200.7	EW
Cadmium, Total	0.00101		mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Calcium, Total	38.8		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Chromium, Total	0.00155		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00113		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Copper, Total	0.00192		mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Iron, Total	0.569		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Magnesium, Total	9.87		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Manganese, Total	2.019		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Mercury, Total	0.00016	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 13:53	EPA 7470A	1,7470A	NB
Nickel, Total	0.02791		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Potassium, Total	8.78		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Sodium, Total	48.4		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Zinc, Total	0.01141		mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	137.5		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 16:13	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-03

Date Collected: 01/18/22 15:40

Client ID: 9-I

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0777		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Barium, Total	0.00602		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Boron, Total	0.018	J	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 10:57	EPA 3005A	19,200.7	EW
Cadmium, Total	0.00020		mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Calcium, Total	8.07		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Chromium, Total	0.01218		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Copper, Total	0.00065	J	mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Iron, Total	0.229		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Magnesium, Total	1.96		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Manganese, Total	0.00503		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Mercury, Total	0.00014	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 13:56	EPA 7470A	1,7470A	NB
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Potassium, Total	0.788		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Sodium, Total	5.88		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Zinc, Total	0.00930	J	mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	28.24		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 16:18	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-04

Date Collected: 01/18/22 16:30

Client ID: 9-OS

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.00758	J	mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Barium, Total	0.00651		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Boron, Total	0.028	J	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 11:45	EPA 3005A	19,200.7	EW
Cadmium, Total	0.00011	J	mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Calcium, Total	5.04		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Chromium, Total	0.01594		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Copper, Total	0.00067	J	mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Iron, Total	0.102		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Magnesium, Total	1.16		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Manganese, Total	0.00210		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Mercury, Total	0.00016	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 14:00	EPA 7470A	1,7470A	NB
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Potassium, Total	0.768		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Sodium, Total	16.1		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Zinc, Total	0.00996	J	mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	17.37		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 16:23	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-05

Date Collected: 01/18/22 12:15

Client ID: 10-I

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0154		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Barium, Total	0.00113		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Boron, Total	0.008	J	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 11:49	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Calcium, Total	8.87		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Chromium, Total	0.00048	J	mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Copper, Total	ND		mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Iron, Total	0.0274	J	mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Magnesium, Total	2.48		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Mercury, Total	0.00014	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 14:03	EPA 7470A	1,7470A	NB
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Potassium, Total	0.804		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Sodium, Total	3.77		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Zinc, Total	0.00804	J	mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	32.36		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 16:47	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-06

Date Collected: 01/18/22 13:20

Client ID: 10-OS

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	1.58		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00041	J	mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Barium, Total	0.01672		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Beryllium, Total	0.00019	J	mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Boron, Total	0.006	J	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 11:54	EPA 3005A	19,200.7	EW
Cadmium, Total	0.00007	J	mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Calcium, Total	3.30		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Chromium, Total	0.00157		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00120		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Copper, Total	0.00524		mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Iron, Total	1.96		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Lead, Total	0.00044	J	mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Magnesium, Total	0.845		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Manganese, Total	0.05222		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Mercury, Total	0.00013	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 14:06	EPA 7470A	1,7470A	NB
Nickel, Total	0.00241		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Potassium, Total	0.585		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Sodium, Total	2.64		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Vanadium, Total	0.00189	J	mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Zinc, Total	0.01201		mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	11.73		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 16:52	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-08

Date Collected: 01/18/22 00:00

Client ID: DUP01182022

Date Received: 01/18/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0650		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Barium, Total	0.00579		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Boron, Total	0.018	J	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 11:58	EPA 3005A	19,200.7	EW
Cadmium, Total	0.00016	J	mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Calcium, Total	7.96		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Chromium, Total	0.01009		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Copper, Total	0.00064	J	mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Iron, Total	0.189		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Magnesium, Total	1.83		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Manganese, Total	0.00417		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Mercury, Total	0.00015	J	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 14:09	EPA 7470A	1,7470A	NB
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Potassium, Total	0.787		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Sodium, Total	5.66		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Zinc, Total	0.01048		mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	27.42		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 16:57	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2202791

Project Number: 20010

Report Date: 02/01/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06,08 Batch: WG1595911-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Barium, Total	ND		mg/l	0.00050	0.00017	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Calcium, Total	ND		mg/l	0.100	0.0394	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Chromium, Total	ND		mg/l	0.00100	0.00017	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Copper, Total	ND		mg/l	0.00100	0.00038	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Potassium, Total	ND		mg/l	0.100	0.0309	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Sodium, Total	ND		mg/l	0.100	0.0293	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV
Zinc, Total	ND		mg/l	0.01000	0.00341	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness (by calculation) - Mansfield Lab for sample(s): 01-06,08 Batch: WG1595911-1										
Hardness	ND		mg/l	0.5400	NA	1	01/20/22 08:58	01/20/22 14:42	1,6020B	SV



Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06,08 Batch: WG1595912-1									
Boron, Total	ND	mg/l	0.030	0.002	1	01/20/22 08:58	01/24/22 10:40	19,200.7	EW

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06,08 Batch: WG1595914-1									
Mercury, Total	ND	mg/l	0.00020	0.00009	1	01/20/22 11:22	01/22/22 13:16	1,7470A	NB

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 Batch: WG1595911-2								
Aluminum, Total	92		-		80-120	-		
Antimony, Total	87		-		80-120	-		
Arsenic, Total	97		-		80-120	-		
Barium, Total	99		-		80-120	-		
Beryllium, Total	107		-		80-120	-		
Cadmium, Total	98		-		80-120	-		
Calcium, Total	109		-		80-120	-		
Chromium, Total	90		-		80-120	-		
Cobalt, Total	87		-		80-120	-		
Copper, Total	91		-		80-120	-		
Iron, Total	97		-		80-120	-		
Lead, Total	98		-		80-120	-		
Magnesium, Total	94		-		80-120	-		
Manganese, Total	92		-		80-120	-		
Nickel, Total	89		-		80-120	-		
Potassium, Total	94		-		80-120	-		
Selenium, Total	97		-		80-120	-		
Silver, Total	102		-		80-120	-		
Sodium, Total	97		-		80-120	-		
Thallium, Total	100		-		80-120	-		
Vanadium, Total	89		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 Batch: WG1595911-2					
Zinc, Total	92	-	80-120	-	
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 01-06,08 Batch: WG1595911-2					
Hardness	100	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 Batch: WG1595912-2					
Boron, Total	108	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 Batch: WG1595914-2					
Mercury, Total	100	-	80-120	-	

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595911-3 WG1595911-4 QC Sample: L2202791-01 Client ID: 10-R												
Aluminum, Total	0.0449	2	1.87	91		1.89	92		75-125	1		20
Antimony, Total	0.00221J	0.5	0.4182	84		0.3440	69	Q	75-125	19		20
Arsenic, Total	ND	0.12	0.1143	95		0.1155	96		75-125	1		20
Barium, Total	0.00339	2	2.019	101		2.021	101		75-125	0		20
Beryllium, Total	ND	0.05	0.04872	97		0.04740	95		75-125	3		20
Cadmium, Total	ND	0.053	0.05294	100		0.05174	98		75-125	2		20
Calcium, Total	8.20	10	19.0	108		17.9	97		75-125	6		20
Chromium, Total	0.00795	0.2	0.1881	90		0.1897	91		75-125	1		20
Cobalt, Total	0.00032J	0.5	0.4431	89		0.4453	89		75-125	0		20
Copper, Total	0.00092J	0.25	0.2322	93		0.2311	92		75-125	0		20
Iron, Total	0.0697	1	1.02	95		1.13	106		75-125	10		20
Lead, Total	ND	0.53	0.5241	99		0.5302	100		75-125	1		20
Magnesium, Total	1.71	10	11.4	97		11.2	95		75-125	2		20
Manganese, Total	0.00594	0.5	0.4661	92		0.4740	94		75-125	2		20
Nickel, Total	0.00281	0.5	0.4429	88		0.4506	90		75-125	2		20
Potassium, Total	0.616	10	9.77	92		9.73	91		75-125	0		20
Selenium, Total	ND	0.12	0.124	103		0.121	101		75-125	2		20
Silver, Total	ND	0.05	0.05214	104		0.05159	103		75-125	1		20
Sodium, Total	3.70	10	12.9	92		12.9	92		75-125	0		20
Thallium, Total	ND	0.12	0.1211	101		0.1232	103		75-125	2		20
Vanadium, Total	ND	0.5	0.4526	90		0.4521	90		75-125	0		20

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595911-3 WG1595911-4 QC Sample: L2202791-01 Client ID: 10-R									
Zinc, Total	0.00986J	0.5	0.4742	95	0.4710	94	75-125	1	20
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595911-3 WG1595911-4 QC Sample: L2202791-01 Client ID: 10-R									
Hardness	27.51	66.2	94.44	101	90.78	96	75-125	4	20
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595912-3 WG1595912-4 QC Sample: L2202791-01 Client ID: 10-R									
Boron, Total	0.008J	1	1.12	112	1.12	112	75-125	0	20
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595914-3 WG1595914-4 QC Sample: L2202791-01 Client ID: 10-R									
Mercury, Total	0.00016J	0.005	0.00500	100	0.00501	100	75-125	0	20

Project Name: RAMAPO LF
Project Number: 20010

**Lab Serial Dilution
 Analysis
 Batch Quality Control**

Lab Number: L2202791
Report Date: 02/01/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595911-6 QC Sample: L2202791-01 Client ID: 10-R						
Calcium, Total	8.20	8.29	mg/l	1		20
Sodium, Total	3.70	3.76	mg/l	2		20
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 01-06,08 QC Batch ID: WG1595911-6 QC Sample: L2202791-01 Client ID: 10-R						
Hardness	27.51	28.04	mg/l	2		20

INORGANICS & MISCELLANEOUS

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-01

Client ID: 10-R

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 11:05

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	26.3		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.143	J	mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:20	121,4500NH3-H	AT
Chemical Oxygen Demand	4.8	J	mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:05	44,410.4	SD



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-02

Client ID: 9-R

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 14:45

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	155.		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	1.35		mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:26	121,4500NH3-H	AT
Chemical Oxygen Demand	7.0	J	mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:06	44,410.4	SD



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-03

Client ID: 9-I

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 15:40

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	20.0		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.150	J	mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:32	121,4500NH3-H	AT
Chemical Oxygen Demand	7.0	J	mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:06	44,410.4	SD



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-04

Client ID: 9-OS

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 16:30

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	32.7		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.133	J	mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:33	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:06	44,410.4	SD



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-05

Client ID: 10-I

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 12:15

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	25.2		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:34	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:06	44,410.4	SD



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-06

Client ID: 10-OS

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 13:20

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.086	J	mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:35	121,4500NH3-H	AT
Chemical Oxygen Demand	9.2	J	mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:07	44,410.4	SD



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2202791

Report Date: 02/01/22

SAMPLE RESULTS

Lab ID: L2202791-08

Client ID: DUP01182022

Sample Location: SUFFERN, NY

Date Collected: 01/18/22 00:00

Date Received: 01/18/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	20.3		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	0.066	1	01/21/22 15:25	01/24/22 18:44	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:07	44,410.4	SD



Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-06,08 Batch: WG1596175-1										
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/20/22 08:35	01/20/22 12:02	44,410.4	SD
General Chemistry - Westborough Lab for sample(s): 01-06,08 Batch: WG1596806-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	0.022	1	01/21/22 15:25	01/24/22 18:14	121,4500NH3-H	AT
General Chemistry - Westborough Lab for sample(s): 01-06,08 Batch: WG1597248-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08 Batch: WG1596175-2								
Chemical Oxygen Demand	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06,08 Batch: WG1596806-2								
Nitrogen, Total Kjeldahl	99		-		78-122	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06,08 Batch: WG1597248-2								
Alkalinity, Total	108		-		90-110	-		10

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08				QC Batch ID: WG1596175-3			QC Sample: L2202791-01			Client ID: 10-R		
Chemical Oxygen Demand	4.8J	47.6	49	103		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06,08				QC Batch ID: WG1596806-4			QC Sample: L2202791-01			Client ID: 10-R		
Nitrogen, Total Kjeldahl	0.143J	8	7.08	88		-	-		77-111	-		24
General Chemistry - Westborough Lab Associated sample(s): 01-06,08				QC Batch ID: WG1597248-4			QC Sample: L2202791-01			Client ID: 10-R		
Alkalinity, Total	26.3	100	138	112		-	-		86-116	-		10

Lab Duplicate Analysis *Batch Quality Control*

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2202791
Report Date: 02/01/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06,08 QC Batch ID: WG1596175-4 QC Sample: L2202791-01 Client ID: 10-R						
Chemical Oxygen Demand	4.8J	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-06,08 QC Batch ID: WG1596806-3 QC Sample: L2202791-01 Client ID: 10-R						
Nitrogen, Total Kjeldahl	0.143J	0.224J	mg/l	NC		24
General Chemistry - Westborough Lab Associated sample(s): 01-06,08 QC Batch ID: WG1597248-3 QC Sample: L2202791-01 Client ID: 10-R						
Alkalinity, Total	26.3	23.7	mg CaCO3/L	10		10

Project Name: RAMAPO LF**Lab Number:** L2202791**Project Number:** 20010**Report Date:** 02/01/22**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

A Absent

B Absent

C Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202791-01A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01A1	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01A2	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01B1	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01B2	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01C1	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01C2	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-01D	Plastic 250ml unpreserved/No Headspace	A	NA		3.2	Y	Absent		ALK-T-2320(14)
L2202791-01D1	Plastic 250ml unpreserved/No Headspace	A	NA		3.2	Y	Absent		ALK-T-2320(14)
L2202791-01D2	Plastic 250ml unpreserved/No Headspace	C	NA		2.9	Y	Absent		ALK-T-2320(14)
L2202791-01E	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		FE-6020T(180),TL-6020T(180),SE-6020T(180),BA-6020T(180),K-6020T(180),CR-6020T(180),NI-6020T(180),CA-6020T(180),CU-6020T(180),ZN-6020T(180),NA-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),HG-T(28),HARDT-6020(180),AG-6020T(180),MG-6020T(180),CD-6020T(180),AL-6020T(180),CO-6020T(180)

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02012216:37
Lab Number: L2202791
Report Date: 02/01/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202791-01E1	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		FE-6020T(180),TL-6020T(180),SE-6020T(180),BA-6020T(180),K-6020T(180),CR-6020T(180),NI-6020T(180),CA-6020T(180),CU-6020T(180),ZN-6020T(180),NA-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),HG-T(28),HARDT-6020(180),AG-6020T(180),MG-6020T(180),CD-6020T(180),AL-6020T(180),CO-6020T(180)
L2202791-01E2	Plastic 250ml HNO3 preserved	C	<2	<2	2.9	Y	Absent		FE-6020T(180),TL-6020T(180),SE-6020T(180),BA-6020T(180),K-6020T(180),CR-6020T(180),NI-6020T(180),CA-6020T(180),CU-6020T(180),ZN-6020T(180),NA-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),HG-T(28),HARDT-6020(180),AG-6020T(180),MG-6020T(180),CD-6020T(180),AL-6020T(180),CO-6020T(180)
L2202791-01F	Plastic 250ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-01F1	Plastic 250ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-01F2	Plastic 250ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-01G	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-01G1	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-01G2	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-01H	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-01H1	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-01H2	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-01I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-01I1	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-01I2	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-01J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-01J1	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-01J2	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-02A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-02B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-02C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02012216:37
Lab Number: L2202791
Report Date: 02/01/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202791-02D	Plastic 250ml unpreserved/No Headspace	C	NA		2.9	Y	Absent		ALK-T-2320(14)
L2202791-02E	Plastic 250ml HNO3 preserved	C	<2	<2	2.9	Y	Absent		FE-6020T(180),SE-6020T(180),TL-6020T(180),BA-6020T(180),CR-6020T(180),NI-6020T(180),K-6020T(180),CA-6020T(180),NA-6020T(180),ZN-6020T(180),CU-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),AS-6020T(180),AL-6020T(180),HARDT-6020(180),AG-6020T(180),HG-T(28),CD-6020T(180),MG-6020T(180),CO-6020T(180)
L2202791-02F	Plastic 250ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-02G	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-02H	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-02I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-02J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-03A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-03B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-03C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-03D	Plastic 250ml unpreserved/No Headspace	C	NA		2.9	Y	Absent		ALK-T-2320(14)
L2202791-03E	Plastic 250ml HNO3 preserved	C	<2	<2	2.9	Y	Absent		TL-6020T(180),BA-6020T(180),SE-6020T(180),FE-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CA-6020T(180),NA-6020T(180),ZN-6020T(180),CU-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),B-UI(180),SB-6020T(180),V-6020T(180),AG-6020T(180),AL-6020T(180),MG-6020T(180),CD-6020T(180),HARDT-6020(180),HG-T(28),CO-6020T(180)
L2202791-03F	Plastic 250ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-03G	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-03H	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-03I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-03J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-04A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-04B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-04C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02012216:37
Lab Number: L2202791
Report Date: 02/01/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202791-04D	Plastic 250ml unpreserved/No Headspace	A	NA		3.2	Y	Absent		ALK-T-2320(14)
L2202791-04E	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SE-6020T(180),BA-6020T(180),FE-6020T(180),TL-6020T(180),K-6020T(180),NI-6020T(180),CR-6020T(180),CA-6020T(180),NA-6020T(180),CU-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),B-UI(180),AL-6020T(180),AG-6020T(180),HARDT-6020(180),MG-6020T(180),CD-6020T(180),HG-T(28),CO-6020T(180)
L2202791-04F	Plastic 250ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-04G	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-04H	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-04I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-04J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-05A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-05B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-05C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-05D	Plastic 250ml unpreserved/No Headspace	A	NA		3.2	Y	Absent		ALK-T-2320(14)
L2202791-05E	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		SE-6020T(180),FE-6020T(180),TL-6020T(180),BA-6020T(180),CA-6020T(180),K-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),AS-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),AL-6020T(180),CD-6020T(180),HG-T(28),MG-6020T(180),HARDT-6020(180),AG-6020T(180),CO-6020T(180)
L2202791-05F	Plastic 250ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-05G	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-05H	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-05I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-05J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-06A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-06B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202791-06C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-06D	Plastic 250ml unpreserved/No Headspace	A	NA		3.2	Y	Absent		ALK-T-2320(14)
L2202791-06E	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		BA-6020T(180),FE-6020T(180),SE-6020T(180),TL-6020T(180),NI-6020T(180),K-6020T(180),CR-6020T(180),CA-6020T(180),NA-6020T(180),CU-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),B-UI(180),SB-6020T(180),V-6020T(180),AG-6020T(180),MG-6020T(180),CD-6020T(180),AL-6020T(180),HG-T(28),HARDT-6020(180),CO-6020T(180)
L2202791-06F	Plastic 250ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-06G	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-06H	Amber 250ml unpreserved	A	7	7	3.2	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-06I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-06J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-07A	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-07B	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-08A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-08B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-08C	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-08D	Plastic 250ml unpreserved/No Headspace	C	NA		2.9	Y	Absent		ALK-T-2320(14)
L2202791-08E	Plastic 250ml HNO3 preserved	C	<2	<2	2.9	Y	Absent		SE-6020T(180),BA-6020T(180),FE-6020T(180),TL-6020T(180),K-6020T(180),CA-6020T(180),CR-6020T(180),NI-6020T(180),ZN-6020T(180),NA-6020T(180),CU-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),SB-6020T(180),V-6020T(180),B-UI(180),AS-6020T(180),AG-6020T(180),CD-6020T(180),HARDT-6020(180),HG-T(28),AL-6020T(180),MG-6020T(180),CO-6020T(180)
L2202791-08F	Plastic 250ml H2SO4 preserved	C	<2	<2	2.9	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2202791-08G	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-08H	Amber 250ml unpreserved	C	7	7	2.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2202791-08I	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2202791-08J	Plastic 250ml unpreserved	B	NA		2.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2202791-09A	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)
L2202791-09B	Vial HCl preserved	A	NA		3.2	Y	Absent		NYTCL-8260(14)

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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 (PFSA's)		
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 (PFESA's)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCA's)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonfluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

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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



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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. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: 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.

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Data Qualifiers

- 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 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.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 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 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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, SM9222D.**

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, EPA 537.1.

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 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 <u>1/18/22</u>		ALPHA Job # <u>L2202791</u>	
		Project Information Project Name: <u>Ramapo LF</u> Project Location: <u>Suffern, NY</u> Project # <u>20010</u> (Use Project name as Project #) ☐		Deliverables ☒ ASP-A ☒ ASP-B ☐ EQUIS (1 File) ☒ EQUIS (4 File) ☐ Other <u>Cat B PFA 5, 1, 4-D, etc. ONLY</u>		Billing Information ☒ Same as Client Info PO #			
Client Information Client: <u>Sterling ENV</u> Address: <u>24 Wade Rd</u> <u>Luthers NY 12110</u> Phone: <u>518 456-4900</u> Fax: Email:		Project Manager: <u>Andrew Millspaugh</u> ALPHAQuote #: Turn-Around Time Standard ☒ Due Date: Rush (only if pre approved) ☐ # of Days:		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:			
These samples have been previously analyzed by Alpha ☐						ANALYSIS		Sample Filtration ☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)	
Other project specific requirements/comments: <u>Andrew.millspaugh@sterlingenvironmental.com</u> <u>paul.scholar@sterlingenvironmental.com</u> Please specify Metals or TAL: <u>*Total Metals - Al, Sb, As, Ba, Be, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, B</u> <u>Hg, Ni, K, Se, Ag, Na, Ti, V, Zn, Co, VOCs = 1,1 Dichloroethane, Benzene, Chlorobenzene, Vinyl Chloride</u>						Total Metals* TKW, COD AQ-NY-557 ISOPE, PFA's AQ-14 Dioxane AQ-27 DSDM AIK-T-2320 VOCs EPA + 8260C		Sample Specific Comments	
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials				
<u>02791-01</u>	<u>10-R</u>	<u>1-18-22</u>	<u>1105</u>	<u>GW</u>	<u>PWS</u>	☒	☒	☒	☒
<u>-01-0260</u>	<u>10-R-MS</u>		<u>1110</u>			☒	☒	☒	☒
<u>-01-03</u>	<u>10-R-MSD</u>		<u>1115</u>			☒	☒	☒	☒
<u>-02-04</u>	<u>9-R</u>		<u>1445</u>			☒	☒	☒	☒
<u>-03-05</u>	<u>9-I</u>		<u>1540</u>			☒	☒	☒	☒
<u>-04-06</u>	<u>9-OS</u>		<u>1630</u>			☒	☒	☒	☒
<u>-05-07</u>	<u>10-I</u>		<u>1215</u>			☒	☒	☒	☒
<u>-06-08</u>	<u>10-OS</u>		<u>1320</u>			☒	☒	☒	☒
<u>-07-09</u>	<u>EB01182022</u>		<u>1145</u>	<u>LW</u>		☒	☒	☒	☒
<u>-08-10</u>	<u>DUP01182022</u>			<u>GW</u>		☒	☒	☒	☒
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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 Preservative		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.)	
		Relinquished By: <u>Paul Se</u>		Date/Time: <u>1-18-22 1744</u>		Received By: <u>GTURN</u>		Date/Time: <u>1/18/22 1744</u>	
		<u>GTURN</u>		<u>1/18/22 1744</u>		<u>Paul Macgillivray</u>		<u>1/18/22 1805</u>	
		<u>Paul Macgillivray</u>		<u>1/18/22 2230</u>		<u>7/1/15 2000</u>		<u>1/18/22 2230</u>	



ANALYTICAL REPORT

Lab Number:	L2203084
Client:	Sterling Environmental Engineering 24 Wade Road Latham, NY 12110
ATTN:	Andrew Millspaugh
Phone:	(518) 456-4900
Project Name:	RAMAPO LF
Project Number:	20010
Report Date:	02/02/22

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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: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2203084-01	EB01182022	WATER	SUFFERN, NY	01/19/22 09:50	01/19/22
L2203084-02	UP-OS	WATER	SUFFERN, NY	01/19/22 10:20	01/19/22
L2203084-03	UP-I	WATER	SUFFERN, NY	01/19/22 11:10	01/19/22
L2203084-04	8-R	WATER	SUFFERN, NY	01/19/22 12:30	01/19/22
L2203084-05	8-I	WATER	SUFFERN, NY	01/19/22 13:20	01/19/22
L2203084-06	8-OS	WATER	SUFFERN, NY	01/19/22 14:00	01/19/22
L2203084-07	4-OS	WATER	SUFFERN, NY	01/19/22 14:45	01/19/22
L2203084-08	2-OS	WATER	SUFFERN, NY	01/19/22 15:40	01/19/22
L2203084-09	PW-1	DW	SUFFERN, NY	01/19/22 16:10	01/19/22
L2203084-10	PW-2	DW	SUFFERN, NY	01/19/22 16:30	01/19/22
L2203084-11	A-10	SOIL	SUFFERN, NY	01/19/22 09:00	01/19/22
L2203084-12	TB01192022	WATER	SUFFERN, NY	01/19/22 00:00	01/19/22

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

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: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

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.

Volatile Organics

L2203084-11: Any reported concentrations that are below 200 ug/kg may be biased low due to the sample not being collected according to 5035-L/5035A-L low-level specifications.

Total Metals

L2203084-11: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

Chemical Oxygen Demand

The WG1599833-3 MS recovery, performed on L2203084-02, is outside the acceptance criteria for chemical oxygen demand (111%); however, the associated LCS recovery is within criteria. No further action was taken.

Nitrogen, Total Kjeldahl

The WG1597278-3 Laboratory Duplicate RPD for nitrogen, total kjeldahl (45%), performed on L2203084-02, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/02/22

ORGANICS

VOLATILES

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-02
 Client ID: UP-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 10:20
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/26/22 23:31
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	106		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-03
 Client ID: UP-I
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 11:10
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/26/22 23:51
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	104		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-04
 Client ID: 8-R
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 12:30
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 00:11
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	102		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-05
 Client ID: 8-I
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 13:20
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 00:32
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	106		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-06
 Client ID: 8-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 14:00
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 00:52
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	106		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-07
 Client ID: 4-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 14:45
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 01:12
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	106		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-08
 Client ID: 2-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 15:40
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 01:33
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-09
 Client ID: PW-1
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 16:10
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 16,524.2
 Analytical Date: 01/20/22 22:53
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Dichlorodifluoromethane	ND		ug/l	0.50	0.16	1
Chloromethane	ND		ug/l	0.50	0.26	1
Vinyl chloride	ND		ug/l	0.50	0.19	1
Bromomethane	ND		ug/l	0.50	0.22	1
Chloroethane	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	0.50	0.14	1
1,1-Dichloroethene	ND		ug/l	0.50	0.15	1
Methylene chloride	ND		ug/l	0.50	0.26	1
Methyl tert butyl ether	ND		ug/l	0.50	0.13	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
1,1-Dichloroethane	ND		ug/l	0.50	0.16	1
2,2-Dichloropropane	ND		ug/l	0.50	0.17	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.17	1
Chloroform	ND		ug/l	0.50	0.15	1
Bromochloromethane	ND		ug/l	0.50	0.14	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
1,1-Dichloropropene	ND		ug/l	0.50	0.19	1
Carbon tetrachloride	ND		ug/l	0.50	0.18	1
1,2-Dichloroethane	ND		ug/l	0.50	0.15	1
Benzene	ND		ug/l	0.50	0.19	1
Trichloroethene	ND		ug/l	0.50	0.22	1
1,2-Dichloropropane	ND		ug/l	0.50	0.18	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	0.50	0.17	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.20	1
Toluene	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.50	0.24	1

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-09
 Client ID: PW-1
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 16:10
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichloropropane	ND		ug/l	0.50	0.22	1
Tetrachloroethene	ND		ug/l	0.50	0.24	1
Dibromochloromethane	ND		ug/l	0.50	0.12	1
1,2-Dibromoethane	ND		ug/l	0.50	0.24	1
Chlorobenzene	ND		ug/l	0.50	0.16	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.13	1
p/m-Xylene	ND		ug/l	0.50	0.30	1
o-Xylene	ND		ug/l	0.50	0.19	1
Styrene	ND		ug/l	0.50	0.16	1
Isopropylbenzene	ND		ug/l	0.50	0.13	1
Bromoform	ND		ug/l	0.50	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.14	1
1,2,3-Trichloropropane	ND		ug/l	0.50	0.24	1
n-Propylbenzene	ND		ug/l	0.50	0.14	1
Bromobenzene	ND		ug/l	0.50	0.13	1
Xylenes, Total ¹	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	0.15	1
o-Chlorotoluene	ND		ug/l	0.50	0.17	1
p-Chlorotoluene	ND		ug/l	0.50	0.15	1
tert-Butylbenzene	ND		ug/l	0.50	0.14	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	0.13	1
sec-Butylbenzene	ND		ug/l	0.50	0.11	1
p-Isopropyltoluene	ND		ug/l	0.50	0.12	1
1,3-Dichlorobenzene	ND		ug/l	0.50	0.17	1
1,4-Dichlorobenzene	ND		ug/l	0.50	0.18	1
n-Butylbenzene	ND		ug/l	0.50	0.25	1
1,2-Dichlorobenzene	ND		ug/l	0.50	0.16	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	0.29	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	0.12	1
Hexachlorobutadiene	ND		ug/l	0.50	0.15	1
Naphthalene	ND		ug/l	0.50	0.14	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	0.17	1

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-09

Date Collected: 01/19/22 16:10

Client ID: PW-1

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	95		80-120
4-Bromofluorobenzene	100		80-120

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-10
 Client ID: PW-2
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 16:30
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 16,524.2
 Analytical Date: 01/20/22 23:21
 Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Dichlorodifluoromethane	ND		ug/l	0.50	0.16	1
Chloromethane	ND		ug/l	0.50	0.26	1
Vinyl chloride	ND		ug/l	0.50	0.19	1
Bromomethane	ND		ug/l	0.50	0.22	1
Chloroethane	ND		ug/l	0.50	0.18	1
Trichlorofluoromethane	ND		ug/l	0.50	0.14	1
1,1-Dichloroethene	ND		ug/l	0.50	0.15	1
Methylene chloride	ND		ug/l	0.50	0.26	1
Methyl tert butyl ether	ND		ug/l	0.50	0.13	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	0.19	1
1,1-Dichloroethane	ND		ug/l	0.50	0.16	1
2,2-Dichloropropane	ND		ug/l	0.50	0.17	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.17	1
Chloroform	ND		ug/l	0.50	0.15	1
Bromochloromethane	ND		ug/l	0.50	0.14	1
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16	1
1,1-Dichloropropene	ND		ug/l	0.50	0.19	1
Carbon tetrachloride	ND		ug/l	0.50	0.18	1
1,2-Dichloroethane	ND		ug/l	0.50	0.15	1
Benzene	ND		ug/l	0.50	0.19	1
Trichloroethene	ND		ug/l	0.50	0.22	1
1,2-Dichloropropane	ND		ug/l	0.50	0.18	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
Dibromomethane	ND		ug/l	0.50	0.17	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.20	1
Toluene	2.2		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	0.50	0.24	1

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-10
 Client ID: PW-2
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 16:30
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichloropropane	ND		ug/l	0.50	0.22	1
Tetrachloroethene	ND		ug/l	0.50	0.24	1
Dibromochloromethane	ND		ug/l	0.50	0.12	1
1,2-Dibromoethane	ND		ug/l	0.50	0.24	1
Chlorobenzene	ND		ug/l	0.50	0.16	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.19	1
Ethylbenzene	ND		ug/l	0.50	0.13	1
p/m-Xylene	ND		ug/l	0.50	0.30	1
o-Xylene	ND		ug/l	0.50	0.19	1
Styrene	ND		ug/l	0.50	0.16	1
Isopropylbenzene	ND		ug/l	0.50	0.13	1
Bromoform	ND		ug/l	0.50	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.14	1
1,2,3-Trichloropropane	ND		ug/l	0.50	0.24	1
n-Propylbenzene	ND		ug/l	0.50	0.14	1
Bromobenzene	ND		ug/l	0.50	0.13	1
Xylenes, Total ¹	ND		ug/l	0.50	0.19	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	0.15	1
o-Chlorotoluene	ND		ug/l	0.50	0.17	1
p-Chlorotoluene	ND		ug/l	0.50	0.15	1
tert-Butylbenzene	ND		ug/l	0.50	0.14	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	0.13	1
sec-Butylbenzene	ND		ug/l	0.50	0.11	1
p-Isopropyltoluene	ND		ug/l	0.50	0.12	1
1,3-Dichlorobenzene	ND		ug/l	0.50	0.17	1
1,4-Dichlorobenzene	ND		ug/l	0.50	0.18	1
n-Butylbenzene	ND		ug/l	0.50	0.25	1
1,2-Dichlorobenzene	ND		ug/l	0.50	0.16	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	0.29	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	0.12	1
Hexachlorobutadiene	ND		ug/l	0.50	0.15	1
Naphthalene	ND		ug/l	0.50	0.14	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	0.17	1

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-10

Date Collected: 01/19/22 16:30

Client ID: PW-2

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		80-120
4-Bromofluorobenzene	101		80-120

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-11
 Client ID: A-10
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 09:00
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Soil
 Analytical Method: 1,8260C
 Analytical Date: 01/28/22 13:08
 Analyst: MKS
 Percent Solids: 12%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/kg	8.4	1.2	1
Chlorobenzene	ND		ug/kg	4.2	1.1	1
Benzene	ND		ug/kg	4.2	1.4	1
Vinyl chloride	ND		ug/kg	8.4	2.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	106		70-130

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-12
 Client ID: TB01192022
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 00:00
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/27/22 01:53
 Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	107		70-130

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2
 Analytical Date: 01/20/22 20:01
 Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 09-10 Batch: WG1597305-4					
Dichlorodifluoromethane	ND		ug/l	0.50	0.16
Chloromethane	ND		ug/l	0.50	0.26
Vinyl chloride	ND		ug/l	0.50	0.19
Bromomethane	ND		ug/l	0.50	0.22
Chloroethane	ND		ug/l	0.50	0.18
Trichlorofluoromethane	ND		ug/l	0.50	0.14
1,1-Dichloroethene	ND		ug/l	0.50	0.15
Methylene chloride	ND		ug/l	0.50	0.26
Methyl tert butyl ether	ND		ug/l	0.50	0.13
trans-1,2-Dichloroethene	ND		ug/l	0.50	0.19
1,1-Dichloroethane	ND		ug/l	0.50	0.16
2,2-Dichloropropane	ND		ug/l	0.50	0.17
cis-1,2-Dichloroethene	ND		ug/l	0.50	0.17
Chloroform	ND		ug/l	0.50	0.15
Bromochloromethane	ND		ug/l	0.50	0.14
1,1,1-Trichloroethane	ND		ug/l	0.50	0.16
1,1-Dichloropropene	ND		ug/l	0.50	0.19
Carbon tetrachloride	ND		ug/l	0.50	0.18
1,2-Dichloroethane	ND		ug/l	0.50	0.15
Benzene	ND		ug/l	0.50	0.19
Trichloroethene	ND		ug/l	0.50	0.22
1,2-Dichloropropane	ND		ug/l	0.50	0.18
Bromodichloromethane	ND		ug/l	0.50	0.19
Dibromomethane	ND		ug/l	0.50	0.17
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.20
Toluene	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	0.50	0.24
1,3-Dichloropropane	ND		ug/l	0.50	0.22

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2
 Analytical Date: 01/20/22 20:01
 Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 09-10 Batch: WG1597305-4					
Tetrachloroethene	ND		ug/l	0.50	0.24
Dibromochloromethane	ND		ug/l	0.50	0.12
1,2-Dibromoethane	ND		ug/l	0.50	0.24
Chlorobenzene	ND		ug/l	0.50	0.16
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	0.19
Ethylbenzene	ND		ug/l	0.50	0.13
p/m-Xylene	ND		ug/l	0.50	0.30
o-Xylene	ND		ug/l	0.50	0.19
Styrene	ND		ug/l	0.50	0.16
Isopropylbenzene	ND		ug/l	0.50	0.13
Bromoform	ND		ug/l	0.50	0.25
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.14
1,2,3-Trichloropropane	ND		ug/l	0.50	0.24
Xylenes, Total ¹	ND		ug/l	0.50	0.19
n-Propylbenzene	ND		ug/l	0.50	0.14
Bromobenzene	ND		ug/l	0.50	0.13
1,3,5-Trimethylbenzene	ND		ug/l	0.50	0.15
o-Chlorotoluene	ND		ug/l	0.50	0.17
p-Chlorotoluene	ND		ug/l	0.50	0.15
tert-Butylbenzene	ND		ug/l	0.50	0.14
1,2,4-Trimethylbenzene	ND		ug/l	0.50	0.13
sec-Butylbenzene	ND		ug/l	0.50	0.11
p-Isopropyltoluene	ND		ug/l	0.50	0.12
1,3-Dichlorobenzene	ND		ug/l	0.50	0.17
1,4-Dichlorobenzene	ND		ug/l	0.50	0.18
n-Butylbenzene	ND		ug/l	0.50	0.25
1,2-Dichlorobenzene	ND		ug/l	0.50	0.16
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	0.29
1,2,4-Trichlorobenzene	ND		ug/l	0.50	0.12

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 16,524.2
 Analytical Date: 01/20/22 20:01
 Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 09-10 Batch: WG1597305-4					
Hexachlorobutadiene	ND		ug/l	0.50	0.15
Naphthalene	ND		ug/l	0.50	0.14
1,2,3-Trichlorobenzene	ND		ug/l	0.50	0.17

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	99		80-120
4-Bromofluorobenzene	109		80-120

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/26/22 19:47
 Analyst: TMS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-08,12 Batch: WG1598755-5					
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chlorobenzene	ND		ug/l	2.5	0.70
Benzene	ND		ug/l	0.50	0.16
Vinyl chloride	ND		ug/l	1.0	0.07

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	101		70-130

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/28/22 12:47
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 11 Batch: WG1599741-5					
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chlorobenzene	ND		ug/kg	0.50	0.13
Benzene	ND		ug/kg	0.50	0.17
Vinyl chloride	ND		ug/kg	1.0	0.34

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 Batch: WG1597305-3								
Dichlorodifluoromethane	98		-		70-130	-		20
Chloromethane	98		-		70-130	-		20
Vinyl chloride	115		-		70-130	-		20
Bromomethane	110		-		70-130	-		20
Chloroethane	112		-		70-130	-		20
Trichlorofluoromethane	102		-		70-130	-		20
1,1-Dichloroethene	110		-		70-130	-		20
Methylene chloride	112		-		70-130	-		20
Methyl tert butyl ether	98		-		70-130	-		20
trans-1,2-Dichloroethene	108		-		70-130	-		20
1,1-Dichloroethane	108		-		70-130	-		20
2,2-Dichloropropane	90		-		70-130	-		20
cis-1,2-Dichloroethene	110		-		70-130	-		20
Chloroform	108		-		70-130	-		20
Bromochloromethane	112		-		70-130	-		20
1,1,1-Trichloroethane	95		-		70-130	-		20
1,1-Dichloropropene	98		-		70-130	-		20
Carbon tetrachloride	100		-		70-130	-		20
1,2-Dichloroethane	105		-		70-130	-		20
Benzene	100		-		70-130	-		20
Trichloroethene	92		-		70-130	-		20
1,2-Dichloropropane	102		-		70-130	-		20
Bromodichloromethane	105		-		70-130	-		20

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 Batch: WG1597305-3								
Dibromomethane	105		-		70-130	-		20
cis-1,3-Dichloropropene	82		-		70-130	-		20
Toluene	105		-		70-130	-		20
trans-1,3-Dichloropropene	78		-		70-130	-		20
1,1,2-Trichloroethane	95		-		70-130	-		20
1,3-Dichloropropane	100		-		70-130	-		20
Tetrachloroethene	98		-		70-130	-		20
Dibromochloromethane	92		-		70-130	-		20
1,2-Dibromoethane	98		-		70-130	-		20
Chlorobenzene	102		-		70-130	-		20
1,1,1,2-Tetrachloroethane	92		-		70-130	-		20
Ethylbenzene	108		-		70-130	-		20
p/m-Xylene	109		-		70-130	-		20
o-Xylene	108		-		70-130	-		20
Styrene	108		-		70-130	-		20
Isopropylbenzene	108		-		70-130	-		20
Bromoform	82		-		70-130	-		20
1,1,2,2-Tetrachloroethane	102		-		70-130	-		20
1,2,3-Trichloropropane	110		-		70-130	-		20
n-Propylbenzene	108		-		70-130	-		20
Bromobenzene	108		-		70-130	-		20
1,3,5-Trimethylbenzene	105		-		70-130	-		20
o-Chlorotoluene	108		-		70-130	-		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 Batch: WG1597305-3								
p-Chlorotoluene	108		-		70-130	-		20
tert-Butylbenzene	115		-		70-130	-		20
1,2,4-Trimethylbenzene	105		-		70-130	-		20
sec-Butylbenzene	105		-		70-130	-		20
p-Isopropyltoluene	102		-		70-130	-		20
1,3-Dichlorobenzene	102		-		70-130	-		20
1,4-Dichlorobenzene	108		-		70-130	-		20
n-Butylbenzene	105		-		70-130	-		20
1,2-Dichlorobenzene	105		-		70-130	-		20
1,2-Dibromo-3-chloropropane	85		-		70-130	-		20
1,2,4-Trichlorobenzene	108		-		70-130	-		20
Hexachlorobutadiene	90		-		70-130	-		20
Naphthalene	105		-		70-130	-		20
1,2,3-Trichlorobenzene	105		-		70-130	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	94				80-120
4-Bromofluorobenzene	98				80-120

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-08,12 Batch: WG1598755-3 WG1598755-4								
1,1-Dichloroethane	89		90		70-130	1		20
Chlorobenzene	90		87		75-130	3		20
Benzene	90		87		70-130	3		20
Vinyl chloride	94		91		55-140	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		101		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	99		96		70-130
Dibromofluoromethane	99		100		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 11 Batch: WG1599741-3 WG1599741-4								
1,1-Dichloroethane	98		99		70-130	1		30
Chlorobenzene	92		92		70-130	0		30
Benzene	92		95		70-130	3		30
Vinyl chloride	101		102		67-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	80		82		70-130
Toluene-d8	105		102		70-130
4-Bromofluorobenzene	110		102		70-130
Dibromofluoromethane	86		88		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1597305-6 QC Sample: L2202875-01 Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	4.4	110		-	-		70-130	-		20
Chloromethane	ND	4	4.2	105		-	-		70-130	-		20
Vinyl chloride	ND	4	5.5	138	Q	-	-		70-130	-		20
Bromomethane	ND	4	4.8	120		-	-		70-130	-		20
Chloroethane	ND	4	4.9	123		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	4.9	123		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	4.9	123		-	-		70-130	-		20
tert-Butyl Alcohol	ND	20	16	80		-	-		70-130	-		20
Methylene chloride	ND	4	4.6	115		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	4.0	100		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	5.1	128		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	4.9	123		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	4.0	100		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	4.9	123		-	-		70-130	-		20
Chloroform	ND	4	4.9	123		-	-		70-130	-		20
Bromochloromethane	ND	4	4.8	120		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	4.4	110		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	4.3	108		-	-		70-130	-		20
Carbon tetrachloride	ND	4	4.8	120		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	4.2	105		-	-		70-130	-		20
Benzene	ND	4	4.3	108		-	-		70-130	-		20
Trichloroethene	ND	4	4.1	103		-	-		70-130	-		20
1,2-Dichloropropane	ND	4	4.4	110		-	-		70-130	-		20
Bromodichloromethane	ND	4	4.4	110		-	-		70-130	-		20

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab		Associated sample(s): 09-10			QC Batch ID: WG1597305-6		QC Sample: L2202875-01		Client ID: MS Sample			
Dibromomethane	ND	4	4.4	110	-	-	-	-	70-130	-	-	20
cis-1,3-Dichloropropene	ND	4	3.3	82	-	-	-	-	70-130	-	-	20
Toluene	ND	4	4.4	110	-	-	-	-	70-130	-	-	20
trans-1,3-Dichloropropene	ND	4	3.2	80	-	-	-	-	70-130	-	-	20
1,1,2-Trichloroethane	ND	4	3.8	95	-	-	-	-	70-130	-	-	20
1,3-Dichloropropane	ND	4	4.0	100	-	-	-	-	70-130	-	-	20
Tetrachloroethene	ND	4	4.2	105	-	-	-	-	70-130	-	-	20
Dibromochloromethane	ND	4	4.1	103	-	-	-	-	70-130	-	-	20
1,2-Dibromoethane	ND	4	3.6	90	-	-	-	-	70-130	-	-	20
Chlorobenzene	ND	4	4.2	105	-	-	-	-	70-130	-	-	20
1,1,1,2-Tetrachloroethane	ND	4	3.6	90	-	-	-	-	70-130	-	-	20
Ethylbenzene	ND	4	4.2	105	-	-	-	-	70-130	-	-	20
p/m-Xylene	ND	8	8.6	108	-	-	-	-	70-130	-	-	20
o-Xylene	ND	4	4.2	105	-	-	-	-	70-130	-	-	20
Styrene	ND	4	3.3	82	-	-	-	-	70-130	-	-	20
Isopropylbenzene	ND	4	4.3	108	-	-	-	-	70-130	-	-	20
Bromoform	ND	4	3.6	90	-	-	-	-	70-130	-	-	20
1,1,2,2-Tetrachloroethane	ND	4	3.9	98	-	-	-	-	70-130	-	-	20
1,2,3-Trichloropropane	ND	4	3.8	95	-	-	-	-	70-130	-	-	20
n-Propylbenzene	ND	4	4.3	108	-	-	-	-	70-130	-	-	20
Bromobenzene	ND	4	4.2	105	-	-	-	-	70-130	-	-	20
1,3,5-Trimethylbenzene	ND	4	4.0	100	-	-	-	-	70-130	-	-	20
o-Chlorotoluene	ND	4	4.3	108	-	-	-	-	70-130	-	-	20
p-Chlorotoluene	ND	4	4.1	103	-	-	-	-	70-130	-	-	20

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1597305-6 QC Sample: L2202875-01 Client ID: MS Sample												
tert-Butylbenzene	ND	4	4.0	100		-	-		70-130	-		20
1,2,4-Trimethylbenzene	ND	4	3.8	95		-	-		70-130	-		20
sec-Butylbenzene	ND	4	4.4	110		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	4.0	100		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	4.1	103		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	4.1	103		-	-		70-130	-		20
n-Butylbenzene	ND	4	4.3	108		-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	4.0	100		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	3.7	92		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	4.1	103		-	-		70-130	-		20
Hexachlorobutadiene	ND	4	3.6	90		-	-		70-130	-		20
Naphthalene	ND	4	3.6	90		-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	3.9	98		-	-		70-130	-		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	99				80-120
4-Bromofluorobenzene	100				80-120

Lab Duplicate Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1597305-5 QC Sample: L2202875-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
tert-Butyl Alcohol	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20
Benzene	ND	ND	ug/l	NC		20

Lab Duplicate Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1597305-5 QC Sample: L2202875-01 Client ID: DUP Sample						
Trichloroethene	ND	ND	ug/l	NC		20
1,2-Dichloropropane	ND	ND	ug/l	NC		20
Bromodichloromethane	ND	ND	ug/l	NC		20
Dibromomethane	ND	ND	ug/l	NC		20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC		20
Toluene	ND	ND	ug/l	NC		20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC		20
1,1,2-Trichloroethane	ND	ND	ug/l	NC		20
1,3-Dichloropropane	ND	ND	ug/l	NC		20
Tetrachloroethene	ND	ND	ug/l	NC		20
Dibromochloromethane	ND	ND	ug/l	NC		20
1,2-Dibromoethane	ND	ND	ug/l	NC		20
Chlorobenzene	ND	ND	ug/l	NC		20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC		20
Ethylbenzene	ND	ND	ug/l	NC		20
p/m-Xylene	ND	ND	ug/l	NC		20
o-Xylene	ND	ND	ug/l	NC		20
Styrene	ND	ND	ug/l	NC		20
Isopropylbenzene	ND	ND	ug/l	NC		20
Bromoform	ND	ND	ug/l	NC		20
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC		20

Lab Duplicate Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1597305-5 QC Sample: L2202875-01 Client ID: DUP Sample						
1,2,3-Trichloropropane	ND	ND	ug/l	NC		20
n-Propylbenzene	ND	ND	ug/l	NC		20
Xylene (Total) ¹	ND	ND	ug/l	NC		20
Bromobenzene	ND	ND	ug/l	NC		20
Trihalomethanes, Total	ND	ND	ug/l	NC		20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC		20
o-Chlorotoluene	ND	ND	ug/l	NC		20
p-Chlorotoluene	ND	ND	ug/l	NC		20
tert-Butylbenzene	ND	ND	ug/l	NC		20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC		20
sec-Butylbenzene	ND	ND	ug/l	NC		20
p-Isopropyltoluene	ND	ND	ug/l	NC		20
1,3-Dichlorobenzene	ND	ND	ug/l	NC		20
1,4-Dichlorobenzene	ND	ND	ug/l	NC		20
n-Butylbenzene	ND	ND	ug/l	NC		20
1,2-Dichlorobenzene	ND	ND	ug/l	NC		20
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC		20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC		20
Hexachlorobutadiene	ND	ND	ug/l	NC		20
Naphthalene	ND	ND	ug/l	NC		20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC		20

Lab Duplicate Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1597305-5 QC Sample: L2202875-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	92		101		80-120
4-Bromofluorobenzene	102		102		80-120

SEMIVOLATILES

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-01
 Client ID: EB01182022
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 09:50
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/26/22 05:41
 Analyst: HT

Extraction Method: ALPHA 23528
 Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.82	0.371	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.82	0.360	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	0.216	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.82	0.298	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.82	0.205	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.82	0.342	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.82	0.214	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	0.626	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.284	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.82	0.458	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.276	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	0.589	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.236	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.82	0.891	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.82	0.527	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.731	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.338	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.297	1
Perfluorotetradecanoic Acid (PFTA)	0.855	J	ng/l	1.82	0.225	1
PFOA/PFOS, Total	ND		ng/l	1.82	0.214	1

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-01

Date Collected: 01/19/22 09:50

Client ID: EB01182022

Date Received: 01/19/22

Sample Location: SUFFERN, 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)	99		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	120		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	106		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	103		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	101		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	104		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	57		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	69		22-136

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-02
 Client ID: UP-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 10:20
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/25/22 14:00
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/24/22 10:32

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: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-02
 Client ID: UP-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 10:20
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/26/22 05:58
 Analyst: HT

Extraction Method: ALPHA 23528
 Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.99	0.406	1
Perfluoropentanoic Acid (PFPeA)	1.06	J	ng/l	1.99	0.394	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.99	0.237	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.99	0.326	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.99	0.224	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.99	0.374	1
Perfluorooctanoic Acid (PFOA)	1.41	J	ng/l	1.99	0.235	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.99	1.32	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.99	0.684	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.99	0.310	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.99	0.501	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.99	0.302	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.99	1.20	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.99	0.644	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.99	0.258	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.99	0.974	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.99	0.577	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.99	0.800	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.99	0.370	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.99	0.325	1
Perfluorotetradecanoic Acid (PFTA)	1.05	J	ng/l	1.99	0.247	1
PFOA/PFOS, Total	1.41	J	ng/l	1.99	0.235	1

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-02

Date Collected: 01/19/22 10:20

Client ID: UP-OS

Date Received: 01/19/22

Sample Location: SUFFERN, 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)	102		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	123		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	109		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	106		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	113		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	107		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	62		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	39		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	66		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	66		22-136

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203084-03
 Client ID: UP-I
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 11:10
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/25/22 18:59
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/24/22 12:44

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	36			15-110		

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-03
 Client ID: UP-I
 Sample Location: SUFFERN, NY

Date Collected: 01/19/22 11:10
 Date Received: 01/19/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/26/22 06:14
 Analyst: HT

Extraction Method: ALPHA 23528
 Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.84	0.374	1
Perfluoropentanoic Acid (PFPeA)	0.771	J	ng/l	1.84	0.363	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.84	0.218	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.84	0.301	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.84	0.345	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	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.631	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.286	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.84	0.462	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.279	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.595	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.899	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.532	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.738	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.341	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.300	1
Perfluorotetradecanoic Acid (PFTA)	0.833	J	ng/l	1.84	0.228	1
PFOA/PFOS, Total	ND		ng/l	1.84	0.217	1

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-03

Date Collected: 01/19/22 11:10

Client ID: UP-I

Date Received: 01/19/22

Sample Location: SUFFERN, 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)	103		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	112		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	130		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	115		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	111		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	120		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	106		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	111		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	106		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	111		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	103		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	105		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	57		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	96		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	36		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	73		22-136

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM
 Analytical Date: 01/25/22 12:46
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/24/22 10:32

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 02 Batch: WG1597323-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	66		15-110

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 01/25/22 14:56
Analyst: DB

Extraction Method: EPA 3510C
Extraction Date: 01/24/22 12:44

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 03 Batch: WG1597373-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/26/22 05:08
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1597999-1					
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)	ND		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)	1.11	J	ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/26/22 05:08
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1597999-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	122		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	105		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	54		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65		22-136

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID

Analytical Date: 01/26/22 13:54

Analyst: RS

Extraction Method: ALPHA 23528

Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1597999-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	91		10-112

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 02 Batch: WG1597323-2 WG1597323-3								
1,4-Dioxane	140		140		40-140	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	53		60		15-110

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 03 Batch: WG1597373-2 WG1597373-3								
1,4-Dioxane	128		139		40-140	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	43		49		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1597999-2								
Perfluorobutanoic Acid (PFBA)	81		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	84		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	81		-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	82		-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	80		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	83		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	80		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	93		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	82		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	80		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	90		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	79		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	104		-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	90		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	79		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	87		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	82		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	82		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	87		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	88		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	80		-		59-182	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1597999-2								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	122				70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	107				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	107				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	103				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58				10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70				22-136

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1597999-2								
Perfluorooctanesulfonamide (FOSA)	112		-		46-170	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	89				10-112

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

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): 01-03 QC Batch ID: WG1597999-3 WG1597999-4 QC Sample: L2203086-05 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	7.80	34.7	36.0	81		36.2	76		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	30.3	34.7	61.4	90		62.2	86		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	1.43J	30.8	27.2	84		28.0	80		65-157	3		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	32.5	27.5	85		31.2	90		37-219	13		30
Perfluorohexanoic Acid (PFHxA)	16.6	34.7	44.7	81		46.6	81		69-168	4		30
Perfluoropentanesulfonic Acid (PFPeS)	0.526J	32.6	27.3	82		30.3	85		52-156	10		30
Perfluoroheptanoic Acid (PFHpA)	6.18	34.7	34.6	82		36.3	81		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	5.77	31.8	31.2	80		33.9	83		69-177	8		30
Perfluorooctanoic Acid (PFOA)	4.88	34.7	33.3	82		35.4	82		63-159	6		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	29.6	33.1	57.6	85		62.1	92		49-187	8		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	33.1	29.4	89		30.4	86		61-179	3		30
Perfluorononanoic Acid (PFNA)	1.44J	34.7	28.5	78		31.0	80		68-171	8		30
Perfluorooctanesulfonic Acid (PFOS)	8.30	32.2	38.4	93		39.2	90		52-151	2		30
Perfluorodecanoic Acid (PFDA)	ND	34.7	28.0	81		29.9	80		63-171	7		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	33.3	31.3	94		33.6	94		56-173	7		30
Perfluorononanesulfonic Acid (PFNS)	ND	33.4	27.0	81		30.9	86		48-150	13		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	34.7	34.9	100		36.3	98		60-166	4		30
Perfluoroundecanoic Acid (PFUnA)	ND	34.7	26.5	76		29.9	80		60-153	12		30
Perfluorodecanesulfonic Acid (PFDS)	ND	33.5	26.2	78		30.1	84		38-156	14		30
Perfluorooctanesulfonamide (FOSA)	ND	34.7	26.0	75		31.4F	84		46-170	19		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	34.7	25.4	73		30.9	83		45-170	20		30
Perfluorododecanoic Acid (PFDoA)	ND	34.7	27.8	80		32.3	87		67-153	15		30

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

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): 01-03 QC Batch ID: WG1597999-3 WG1597999-4 QC Sample: L2203086-05 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	34.7	26.4	76		29.7	80		48-158	12		30
Perfluorotetradecanoic Acid (PFTA)	0.776J	34.7	28.6	80		28.3	74		59-182	1		30

Surrogate (Extracted Internal Standard)	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	160		149		10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	263	Q	248	Q	12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	249	Q	231	Q	14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		72		27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70		69		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		86		55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		93		62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		81		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		94		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	112		110		71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		75		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		62		22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		97		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		88		62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	47		38		10-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103		104		69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		97		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		102		59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		113		70-131

METALS

Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-02

Date Collected: 01/19/22 10:20

Client ID: UP-OS

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.113		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Barium, Total	0.00339		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Boron, Total	0.007	J	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 13:03	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Calcium, Total	30.2		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Chromium, Total	0.00143		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Copper, Total	0.00081	J	mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Iron, Total	0.167		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Magnesium, Total	7.63		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Manganese, Total	0.00426		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Mercury, Total	0.00010	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 10:59	EPA 7470A	1,7470A	ZK
Nickel, Total	0.00083	J	mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Potassium, Total	0.653		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Sodium, Total	3.64		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Thallium, Total	0.00014	J	mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Zinc, Total	0.01178		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	106.9		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 15:50	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-03

Date Collected: 01/19/22 11:10

Client ID: UP-I

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0519		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00037	J	mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Barium, Total	0.00547		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Boron, Total	0.004	J	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 14:04	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Calcium, Total	22.2		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Chromium, Total	0.00428		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00018	J	mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Copper, Total	0.00103		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Iron, Total	0.233		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Magnesium, Total	4.89		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Manganese, Total	0.00371		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:02	EPA 7470A	1,7470A	ZK
Nickel, Total	0.00260		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Potassium, Total	0.524		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Sodium, Total	3.72		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Vanadium, Total	0.00250	J	mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Zinc, Total	0.01250		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	75.71		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 15:55	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-04

Date Collected: 01/19/22 12:30

Client ID: 8-R

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0371		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00171		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Barium, Total	0.01697		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Beryllium, Total	0.00012	J	mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Boron, Total	0.130		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 12:58	EPA 3005A	19,200.7	EW
Cadmium, Total	0.00029		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Calcium, Total	159.		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Chromium, Total	0.01692		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Cobalt, Total	0.01312		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Copper, Total	0.00505		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Iron, Total	2.46		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Lead, Total	0.00425		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Magnesium, Total	41.7		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Manganese, Total	4.152		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Mercury, Total	0.00015	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:06	EPA 7470A	1,7470A	ZK
Nickel, Total	0.04774		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Potassium, Total	2.76		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Sodium, Total	37.8		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Zinc, Total	0.01900		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	569.2		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:00	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-05

Date Collected: 01/19/22 13:20

Client ID: 8-I

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00317		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Barium, Total	0.02500		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Boron, Total	0.10		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 13:39	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Calcium, Total	100.		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Chromium, Total	0.00317		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00752		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Copper, Total	ND		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Iron, Total	7.52		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Magnesium, Total	24.8		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Manganese, Total	3.129		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Mercury, Total	0.00014	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:24	EPA 7470A	1,7470A	ZK
Nickel, Total	0.00541		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Potassium, Total	5.46		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Sodium, Total	44.7		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Thallium, Total	0.00029	J	mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Zinc, Total	0.01249		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	352.9		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:14	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-06

Date Collected: 01/19/22 14:00

Client ID: 8-OS

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.00963	J	mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00049	J	mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Barium, Total	0.00950		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Boron, Total	0.031		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 13:44	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Calcium, Total	28.2		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Chromium, Total	0.3624		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00082		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Copper, Total	0.00457		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Iron, Total	2.19		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Magnesium, Total	7.05		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Manganese, Total	0.2268		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Mercury, Total	0.00011	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:27	EPA 7470A	1,7470A	ZK
Nickel, Total	0.01390		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Potassium, Total	1.44		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Sodium, Total	24.6		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Thallium, Total	0.00017	J	mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Zinc, Total	0.01182		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	99.37		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:19	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-07

Date Collected: 01/19/22 14:45

Client ID: 4-OS

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.314		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00073		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Barium, Total	0.02713		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Boron, Total	0.014	J	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 13:49	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Calcium, Total	32.8		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Chromium, Total	0.9992		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00213		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Copper, Total	0.00911		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Iron, Total	6.58		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Magnesium, Total	14.4		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Manganese, Total	0.07359		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:30	EPA 7470A	1,7470A	ZK
Nickel, Total	0.01962		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Potassium, Total	0.854		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Sodium, Total	80.5		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Vanadium, Total	0.00400	J	mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Zinc, Total	0.01222		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	141.2		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:24	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-08

Date Collected: 01/19/22 15:40

Client ID: 2-OS

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.292		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Antimony, Total	0.00067	J	mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00084		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Barium, Total	0.05683		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Boron, Total	0.143		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 13:54	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Calcium, Total	125.		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Chromium, Total	0.03354		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00155		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Copper, Total	0.00927		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Iron, Total	0.849		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Lead, Total	0.00095	J	mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Magnesium, Total	15.7		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Manganese, Total	0.05451		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:34	EPA 7470A	1,7470A	ZK
Nickel, Total	0.00811		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Potassium, Total	8.57		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Sodium, Total	32.0		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Vanadium, Total	0.00167	J	mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Zinc, Total	0.01241		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	377.6		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:29	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-09

Date Collected: 01/19/22 16:10

Client ID: PW-1

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	0.032	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Antimony, Total	0.0021	J	mg/l	0.0040	0.0004	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Arsenic, Total	ND		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Barium, Total	0.0056		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Beryllium, Total	ND		mg/l	0.0010	0.0001	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Boron, Total	0.024	J	mg/l	0.030	0.002	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.0002	0.0001	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Calcium, Total	7.11		mg/l	0.100	0.035	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Chromium, Total	0.0003	J	mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Cobalt, Total	ND		mg/l	0.020	0.002	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Copper, Total	0.0938		mg/l	0.0010	0.0004	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Iron, Total	0.010	J	mg/l	0.050	0.009	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Lead, Total	0.0076		mg/l	0.0010	0.0003	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Magnesium, Total	1.86		mg/l	0.100	0.015	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Manganese, Total	ND		mg/l	0.010	0.002	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Mercury, Total	0.0001	J	mg/l	0.0002	0.0001	1	01/26/22 09:56	01/26/22 14:32	EPA 245.1	3,245.1	AC
Nickel, Total	0.0007	J	mg/l	0.0020	0.0006	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Potassium, Total	1.03	J	mg/l	2.50	0.237	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Selenium, Total	ND		mg/l	0.0050	0.0017	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Silver, Total	ND		mg/l	0.0004	0.0002	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Sodium, Total	18.4		mg/l	2.00	0.120	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW
Thallium, Total	ND		mg/l	0.0010	0.0001	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Vanadium, Total	ND		mg/l	0.0050	0.0016	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Zinc, Total	0.1642		mg/l	0.0100	0.0034	1	01/26/22 09:51	01/26/22 15:27	EPA 3005A	3,200.8	WP
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	25.4		mg/l	0.660	NA	1	01/26/22 09:51	02/02/22 09:39	EPA 3005A	19,200.7	EW



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-10

Date Collected: 01/19/22 16:30

Client ID: PW-2

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	0.032	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Antimony, Total	0.0012	J	mg/l	0.0040	0.0004	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Arsenic, Total	ND		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Barium, Total	0.0014		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Beryllium, Total	ND		mg/l	0.0010	0.0001	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Boron, Total	0.011	J	mg/l	0.030	0.002	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.0002	0.0001	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Calcium, Total	31.1		mg/l	0.100	0.035	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Chromium, Total	ND		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Cobalt, Total	ND		mg/l	0.020	0.002	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Copper, Total	0.0074		mg/l	0.0010	0.0004	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Iron, Total	0.104		mg/l	0.050	0.009	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Lead, Total	ND		mg/l	0.0010	0.0003	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Magnesium, Total	3.45		mg/l	0.100	0.015	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Manganese, Total	0.005	J	mg/l	0.010	0.002	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Mercury, Total	0.0001	J	mg/l	0.0002	0.0001	1	01/26/22 09:56	01/26/22 14:35	EPA 245.1	3,245.1	AC
Nickel, Total	ND		mg/l	0.0020	0.0006	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Potassium, Total	1.07	J	mg/l	2.50	0.237	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Selenium, Total	ND		mg/l	0.0050	0.0017	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Silver, Total	ND		mg/l	0.0004	0.0002	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Sodium, Total	7.37		mg/l	2.00	0.120	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW
Thallium, Total	ND		mg/l	0.0010	0.0001	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Vanadium, Total	ND		mg/l	0.0050	0.0016	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Zinc, Total	0.0263		mg/l	0.0100	0.0034	1	01/26/22 09:51	01/26/22 15:31	EPA 3005A	3,200.8	WP
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	91.8		mg/l	0.660	NA	1	01/26/22 09:51	02/02/22 09:26	EPA 3005A	19,200.7	EW



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-11

Date Collected: 01/19/22 09:00

Client ID: A-10

Date Received: 01/19/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 12%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2470		mg/kg	65.2	17.6	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Antimony, Total	ND		mg/kg	32.6	2.48	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Arsenic, Total	31.6		mg/kg	6.52	1.36	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Barium, Total	700		mg/kg	6.52	1.13	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Beryllium, Total	0.391	J	mg/kg	3.26	0.215	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Boron, Total	19.0	J	mg/kg	19.6	1.08	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Cadmium, Total	ND		mg/kg	6.52	0.639	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Calcium, Total	17000		mg/kg	65.2	22.8	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Chromium, Total	36.2		mg/kg	6.52	0.626	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Cobalt, Total	62.5		mg/kg	13.0	1.08	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Copper, Total	57.2		mg/kg	6.52	1.68	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Iron, Total	177000		mg/kg	32.6	5.89	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Lead, Total	22.6	J	mg/kg	32.6	1.75	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Magnesium, Total	1920		mg/kg	65.2	10.0	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Manganese, Total	103000		mg/kg	32.6	5.18	10	01/26/22 12:15	01/28/22 17:32	EPA 3050B	1,6010D	BV
Mercury, Total	ND		mg/kg	0.595	0.388	1	01/26/22 12:27	02/01/22 18:39	EPA 7471B	1,7471B	ZK
Nickel, Total	22.6		mg/kg	16.3	1.58	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Potassium, Total	381	J	mg/kg	1630	93.9	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Selenium, Total	ND		mg/kg	13.0	1.68	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Silver, Total	15.1		mg/kg	6.52	1.84	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Sodium, Total	1520		mg/kg	1300	20.5	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Thallium, Total	ND		mg/kg	13.0	2.05	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW
Vanadium, Total	168		mg/kg	32.6	6.62	10	01/26/22 12:15	01/28/22 17:32	EPA 3050B	1,6010D	BV
Zinc, Total	133		mg/kg	32.6	1.91	2	01/26/22 12:15	01/27/22 15:06	EPA 3050B	1,6010D	EW



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-08 Batch: WG1596218-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Barium, Total	ND		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Calcium, Total	ND		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Chromium, Total	ND		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Copper, Total	ND		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Potassium, Total	ND		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Sodium, Total	ND		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Thallium, Total	0.00026	J	mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Zinc, Total	ND		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness (by calculation) - Mansfield Lab for sample(s): 02-08 Batch: WG1596218-1										
Hardness	ND		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-08 Batch: WG1596219-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 10:15	1,7470A	ZK

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-08 Batch: WG1596220-1										
Boron, Total	ND		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 12:44	19,200.7	EW

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 11 Batch: WG1598004-1										
Aluminum, Total	1.98	J	mg/kg	4.00	1.08	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Antimony, Total	ND		mg/kg	2.00	0.152	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Arsenic, Total	ND		mg/kg	0.400	0.083	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Barium, Total	ND		mg/kg	0.400	0.070	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Beryllium, Total	ND		mg/kg	0.200	0.013	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Boron, Total	ND		mg/kg	1.20	0.066	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Cadmium, Total	ND		mg/kg	0.400	0.039	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Calcium, Total	ND		mg/kg	4.00	1.40	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Chromium, Total	ND		mg/kg	0.400	0.038	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Cobalt, Total	ND		mg/kg	0.800	0.066	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW



Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Copper, Total	ND		mg/kg	0.400	0.103	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Iron, Total	0.788	J	mg/kg	2.00	0.361	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Lead, Total	ND		mg/kg	2.00	0.107	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Magnesium, Total	ND		mg/kg	4.00	0.616	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Manganese, Total	0.264	J	mg/kg	0.400	0.064	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Nickel, Total	ND		mg/kg	1.00	0.097	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Potassium, Total	ND		mg/kg	100	5.76	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Selenium, Total	ND		mg/kg	0.800	0.103	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Silver, Total	ND		mg/kg	0.400	0.113	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Sodium, Total	8.78	J	mg/kg	80.0	1.26	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Thallium, Total	ND		mg/kg	0.800	0.126	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Vanadium, Total	ND		mg/kg	0.400	0.081	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW
Zinc, Total	ND		mg/kg	2.00	0.117	1	01/26/22 12:15	01/27/22 10:45	1,6010D	EW

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 11 Batch: WG1598005-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	01/26/22 12:27	02/01/22 17:59	1,7471B	ZK

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 09-10 Batch: WG1598035-1										
Antimony, Total	ND		mg/l	0.0040	0.0004	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Arsenic, Total	ND		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Barium, Total	ND		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Beryllium, Total	ND		mg/l	0.0010	0.0001	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Cadmium, Total	ND		mg/l	0.0002	0.0001	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Chromium, Total	ND		mg/l	0.0010	0.0002	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Copper, Total	ND		mg/l	0.0010	0.0004	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Lead, Total	ND		mg/l	0.0010	0.0003	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Nickel, Total	ND		mg/l	0.0020	0.0006	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Selenium, Total	ND		mg/l	0.0050	0.0017	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Silver, Total	ND		mg/l	0.0004	0.0002	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Thallium, Total	0.0002	J	mg/l	0.0010	0.0001	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Vanadium, Total	0.0017	J	mg/l	0.0050	0.0016	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP
Zinc, Total	ND		mg/l	0.0100	0.0034	1	01/26/22 09:51	01/26/22 15:04	3,200.8	WP

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 09-10 Batch: WG1598036-1										
Aluminum, Total	ND		mg/l	0.100	0.032	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Boron, Total	ND		mg/l	0.030	0.002	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Calcium, Total	ND		mg/l	0.100	0.035	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Cobalt, Total	ND		mg/l	0.020	0.002	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Iron, Total	ND		mg/l	0.050	0.009	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Magnesium, Total	ND		mg/l	0.100	0.015	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Manganese, Total	ND		mg/l	0.010	0.002	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Potassium, Total	ND		mg/l	2.50	0.237	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW
Sodium, Total	ND		mg/l	2.00	0.120	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 09-10 Batch: WG1598036-1										
Hardness	ND		mg/l	0.660	NA	1	01/26/22 09:51	02/02/22 09:17	19,200.7	EW



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 09-10 Batch: WG1598038-1									
Mercury, Total	ND	mg/l	0.0002	0.0001	1	01/26/22 09:56	01/26/22 14:08	3,245.1	AC

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08 Batch: WG1596218-2								
Aluminum, Total	100		-		80-120	-		
Antimony, Total	86		-		80-120	-		
Arsenic, Total	102		-		80-120	-		
Barium, Total	101		-		80-120	-		
Beryllium, Total	105		-		80-120	-		
Cadmium, Total	100		-		80-120	-		
Calcium, Total	88		-		80-120	-		
Chromium, Total	97		-		80-120	-		
Cobalt, Total	98		-		80-120	-		
Copper, Total	103		-		80-120	-		
Iron, Total	103		-		80-120	-		
Lead, Total	101		-		80-120	-		
Magnesium, Total	100		-		80-120	-		
Manganese, Total	98		-		80-120	-		
Nickel, Total	100		-		80-120	-		
Potassium, Total	96		-		80-120	-		
Selenium, Total	95		-		80-120	-		
Silver, Total	106		-		80-120	-		
Sodium, Total	98		-		80-120	-		
Thallium, Total	104		-		80-120	-		
Vanadium, Total	98		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08 Batch: WG1596218-2					
Zinc, Total	102	-	80-120	-	
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 02-08 Batch: WG1596218-2					
Hardness	95	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 02-08 Batch: WG1596219-2					
Mercury, Total	104	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 02-08 Batch: WG1596220-2					
Boron, Total	109	-	85-115	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 11 Batch: WG1598004-2 SRM Lot Number: D113-540					
Aluminum, Total	77	-	51-149	-	
Antimony, Total	174	-	20-250	-	
Arsenic, Total	99	-	70-130	-	
Barium, Total	94	-	75-125	-	
Beryllium, Total	95	-	75-125	-	
Boron, Total	95	-	63-140	-	
Cadmium, Total	95	-	75-125	-	
Calcium, Total	94	-	73-128	-	
Chromium, Total	97	-	70-130	-	
Cobalt, Total	97	-	75-125	-	
Copper, Total	100	-	75-125	-	
Iron, Total	101	-	36-164	-	
Lead, Total	96	-	72-128	-	
Magnesium, Total	86	-	63-138	-	
Manganese, Total	98	-	77-123	-	
Nickel, Total	96	-	70-130	-	
Potassium, Total	84	-	59-141	-	
Selenium, Total	98	-	66-134	-	
Silver, Total	96	-	70-131	-	
Sodium, Total	92	-	35-164	-	
Thallium, Total	93	-	70-130	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 11 Batch: WG1598004-2 SRM Lot Number: D113-540					
Vanadium, Total	96	-	74-126	-	
Zinc, Total	96	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 11 Batch: WG1598005-2 SRM Lot Number: D113-540					
Mercury, Total	92	-	60-140	-	
Total Metals - Mansfield Lab Associated sample(s): 09-10 Batch: WG1598035-2					
Antimony, Total	87	-	85-115	-	
Arsenic, Total	97	-	85-115	-	
Barium, Total	98	-	85-115	-	
Beryllium, Total	99	-	85-115	-	
Cadmium, Total	97	-	85-115	-	
Chromium, Total	102	-	85-115	-	
Copper, Total	98	-	85-115	-	
Lead, Total	97	-	85-115	-	
Nickel, Total	100	-	85-115	-	
Selenium, Total	96	-	85-115	-	
Silver, Total	103	-	85-115	-	
Thallium, Total	104	-	85-115	-	
Vanadium, Total	102	-	85-115	-	
Zinc, Total	99	-	85-115	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 09-10 Batch: WG1598036-2					
Aluminum, Total	110	-	85-115	-	
Boron, Total	108	-	85-115	-	
Calcium, Total	102	-	85-115	-	
Cobalt, Total	97	-	85-115	-	
Iron, Total	105	-	85-115	-	
Magnesium, Total	105	-	85-115	-	
Manganese, Total	102	-	85-115	-	
Potassium, Total	105	-	85-115	-	
Sodium, Total	103	-	85-115	-	
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 09-10 Batch: WG1598036-2					
Hardness	104	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 09-10 Batch: WG1598038-2					
Mercury, Total	98	-	85-115	-	

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08			QC Batch ID: WG1596218-3		WG1596218-4	QC Sample: L2203086-05			Client ID: MS Sample			
Aluminum, Total	0.0300	2	2.12	104		2.22	110		75-125	5		20
Antimony, Total	0.00046J	0.5	0.5175	104		0.4890	98		75-125	6		20
Arsenic, Total	0.00070	0.12	0.1267	105		0.1284	106		75-125	1		20
Barium, Total	0.2859	2	2.368	104		2.376	104		75-125	0		20
Beryllium, Total	ND	0.05	0.05211	104		0.06039	121		75-125	15		20
Cadmium, Total	ND	0.053	0.05407	102		0.05462	103		75-125	1		20
Calcium, Total	193.	10	210	170	Q	217	240	Q	75-125	3		20
Chromium, Total	0.00027J	0.2	0.1955	98		0.2066	103		75-125	6		20
Cobalt, Total	0.00020J	0.5	0.4983	100		0.5129	102		75-125	3		20
Copper, Total	ND	0.25	0.2582	103		0.2574	103		75-125	0		20
Iron, Total	0.854	1	1.97	112		1.90	105		75-125	4		20
Lead, Total	ND	0.53	0.5490	104		0.5585	105		75-125	2		20
Magnesium, Total	59.9	10	69.4	95		72.2	123		75-125	4		20
Manganese, Total	0.6083	0.5	1.109	100		1.134	105		75-125	2		20
Nickel, Total	ND	0.5	0.5066	101		0.5081	102		75-125	0		20
Potassium, Total	3.89	10	13.9	100		14.5	106		75-125	4		20
Selenium, Total	ND	0.12	0.101	84		0.100	83		75-125	1		20
Silver, Total	ND	0.05	0.05346	107		0.05364	107		75-125	0		20
Sodium, Total	332.	10	333	10	Q	344	120		75-125	3		20
Thallium, Total	0.00024J	0.12	0.1287	107		0.1289	107		75-125	0		20
Vanadium, Total	ND	0.5	0.5126	102		0.5233	105		75-125	2		20

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596218-3 WG1596218-4 QC Sample: L2203086-05 Client ID: MS Sample									
Zinc, Total	0.00990J	0.5	0.5163	103	0.5230	105	75-125	1	20
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596218-3 WG1596218-4 QC Sample: L2203086-05 Client ID: MS Sample									
Hardness	728.9	66.2	809.8	122	839.4	167	Q 75-125	4	20
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596219-3 WG1596219-4 QC Sample: L2203086-05 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00510	102	0.00504	101	75-125	1	20
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596220-3 QC Sample: L2203084-02 Client ID: UP-OS									
Boron, Total	0.007J	1	1.12	112	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596220-7 QC Sample: L2203084-03 Client ID: UP-I									
Boron, Total	0.004J	1	1.11	111	-	-	75-125	-	20

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 11 QC Batch ID: WG1598004-3 QC Sample: L2203052-02 Client ID: MS Sample									
Aluminum, Total	7640	174	9550	1100	Q	-	75-125	-	20
Antimony, Total	0.605J	43.5	39.0	90		-	75-125	-	20
Arsenic, Total	6.99	10.4	18.3	108		-	75-125	-	20
Barium, Total	52.7	174	215	93		-	75-125	-	20
Beryllium, Total	0.430J	4.35	4.54	104		-	75-125	-	20
Boron, Total	1.74J	87	76.7	88		-	75-125	-	20
Cadmium, Total	ND	4.61	3.51	76		-	75-125	-	20
Calcium, Total	28300	870	17700	0	Q	-	75-125	-	20
Chromium, Total	18.2	17.4	35.4	99		-	75-125	-	20
Cobalt, Total	4.96	43.5	41.0	83		-	75-125	-	20
Copper, Total	26.3	21.8	47.2	96		-	75-125	-	20
Iron, Total	17400	87	22600	5980	Q	-	75-125	-	20
Lead, Total	47.2	46.1	83.6	79		-	75-125	-	20
Magnesium, Total	17200	870	11500	0	Q	-	75-125	-	20
Manganese, Total	208	43.5	270	142	Q	-	75-125	-	20
Nickel, Total	9.27	43.5	46.9	86		-	75-125	-	20
Potassium, Total	561	870	1570	116		-	75-125	-	20
Selenium, Total	ND	10.4	9.22	88		-	75-125	-	20
Silver, Total	ND	26.1	26.1	100		-	75-125	-	20
Sodium, Total	68.3J	870	956	110		-	75-125	-	20
Thallium, Total	0.290J	10.4	8.61	82		-	75-125	-	20

Matrix Spike Analysis **Batch Quality Control**

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 11 QC Batch ID: WG1598004-3 QC Sample: L2203052-02 Client ID: MS Sample									
Vanadium, Total	31.3	43.5	83.8	121	-	-	75-125	-	20
Zinc, Total	63.7	43.5	96.4	75	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 11 QC Batch ID: WG1598005-3 QC Sample: L2203076-03 Client ID: MS Sample									
Mercury, Total	ND	0.188	0.186	99	-	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598035-3 QC Sample: L2203084-09 Client ID: PW-1									
Antimony, Total	0.0021J	0.5	0.4364	87	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1232	103	-	-	70-130	-	20
Barium, Total	0.0056	2	2.034	101	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0512	102	-	-	70-130	-	20
Cadmium, Total	ND	0.053	0.0529	100	-	-	70-130	-	20
Chromium, Total	0.0003J	0.2	0.2198	110	-	-	70-130	-	20
Copper, Total	0.0938	0.25	0.3566	105	-	-	70-130	-	20
Lead, Total	0.0076	0.53	0.5340	99	-	-	70-130	-	20
Nickel, Total	0.0007J	0.5	0.5195	104	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1274	106	-	-	70-130	-	20
Silver, Total	ND	0.05	0.0537	107	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1281	107	-	-	70-130	-	20
Vanadium, Total	ND	0.5	0.5537	111	-	-	70-130	-	20
Zinc, Total	0.1642	0.5	0.6988	107	-	-	70-130	-	20

Matrix Spike Analysis **Batch Quality Control**

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598036-3 QC Sample: L2203084-09 Client ID: PW-1									
Aluminum, Total	ND	2	2.20	110	-	-	75-125	-	20
Boron, Total	0.024J	1	1.12	112	-	-	75-125	-	20
Calcium, Total	7.11	10	17.1	100	-	-	75-125	-	20
Cobalt, Total	ND	0.5	0.486	97	-	-	75-125	-	20
Iron, Total	0.010J	1	1.06	106	-	-	75-125	-	20
Magnesium, Total	1.86	10	12.4	105	-	-	75-125	-	20
Manganese, Total	ND	0.5	0.508	102	-	-	75-125	-	20
Potassium, Total	1.03J	10	11.5	115	-	-	75-125	-	20
Sodium, Total	18.4	10	28.6	102	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598036-3 QC Sample: L2203084-09 Client ID: PW-1									
Hardness	25.4	66.2	93.6	103	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598038-3 QC Sample: L2203226-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0048	96	-	-	70-130	-	20

Project Name: RAMAPO LF
Project Number: 20010

Lab Duplicate Analysis

Batch Quality Control

Lab Number: L2203084
Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596220-4 QC Sample: L2203084-02 Client ID: UP-OS						
Boron, Total	0.007J	0.008J	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596220-8 QC Sample: L2203084-03 Client ID: UP-I						
Boron, Total	0.004J	0.004J	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 11 QC Batch ID: WG1598004-4 QC Sample: L2203052-02 Client ID: DUP Sample						
Lead, Total	47.2	42.8	mg/kg	10		20
Total Metals - Mansfield Lab Associated sample(s): 11 QC Batch ID: WG1598005-4 QC Sample: L2203076-03 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598035-4 QC Sample: L2203084-09 Client ID: PW-1					
Antimony, Total	0.0021J	0.0064	mg/l	NC	20
Arsenic, Total	ND	ND	mg/l	NC	20
Barium, Total	0.0056	0.0055	mg/l	2	20
Beryllium, Total	ND	ND	mg/l	NC	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	0.0003J	0.0007J	mg/l	NC	20
Copper, Total	0.0938	0.0950	mg/l	1	20
Lead, Total	0.0076	0.0076	mg/l	0	20
Nickel, Total	0.0007J	0.0006J	mg/l	NC	20
Selenium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Thallium, Total	ND	ND	mg/l	NC	20
Vanadium, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.1642	0.1657	mg/l	1	20

Lab Duplicate Analysis *Batch Quality Control*

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598036-4 QC Sample: L2203084-09 Client ID: PW-1					
Aluminum, Total	ND	ND	mg/l	NC	20
Boron, Total	0.024J	0.025J	mg/l	NC	20
Calcium, Total	7.11	6.98	mg/l	2	20
Cobalt, Total	ND	ND	mg/l	NC	20
Iron, Total	0.010J	0.011J	mg/l	NC	20
Magnesium, Total	1.86	1.84	mg/l	1	20
Manganese, Total	ND	ND	mg/l	NC	20
Potassium, Total	1.03J	0.995J	mg/l	NC	20
Sodium, Total	18.4	18.0	mg/l	2	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598036-4 QC Sample: L2203084-09 Client ID: PW-1					
Hardness	25.4	25.0	mg/l	2	20
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598038-4 QC Sample: L2203226-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

Project Name: RAMAPO LF

Project Number: 20010

**Lab Serial Dilution
Analysis
Batch Quality Control**

Lab Number: L2203084

Report Date: 02/02/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-08 QC Batch ID: WG1596218-6 QC Sample: L2203086-05 Client ID: DUP Sample						
Barium, Total	0.2859	0.2822	mg/l	1		20
Calcium, Total	193.	205.	mg/l	6		20
Magnesium, Total	59.9	60.6	mg/l	1		20
Manganese, Total	0.6083	0.6008	mg/l	1		20
Potassium, Total	3.89	3.83	mg/l	2		20
Sodium, Total	332.	330.	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598036-6 QC Sample: L2203084-09 Client ID: PW-1						
Calcium, Total	7.11	6.62	mg/l	7		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 09-10 QC Batch ID: WG1598036-6 QC Sample: L2203084-09 Client ID: PW-1						
Hardness	25.4	23.8	mg/l	6		20

INORGANICS & MISCELLANEOUS

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-02

Client ID: UP-OS

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 10:20

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	111.		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.474		mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:34	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-03

Client ID: UP-I

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 11:10

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	74.3		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.120	J	mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:37	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-04

Client ID: 8-R

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 12:30

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	495.		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.531		mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:41	121,4500NH3-H	AT
Chemical Oxygen Demand	18.		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-05

Client ID: 8-I

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 13:20

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	326.		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	1.42		mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:42	121,4500NH3-H	AT
Chemical Oxygen Demand	11.		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-06

Client ID: 8-OS

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 14:00

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	86.7		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
Nitrogen, Total Kjeldahl	0.136	J	mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:43	121,4500NH3-H	AT
Chemical Oxygen Demand	4.8	J	mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-07

Client ID: 4-OS

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 14:45

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	72.5		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.116	J	mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:43	121,4500NH3-H	AT
Chemical Oxygen Demand	4.8	J	mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-08

Client ID: 2-OS

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 15:40

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	399.		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.576		mg/l	0.300	0.066	1	01/24/22 11:28	01/25/22 19:44	121,4500NH3-H	AT
Chemical Oxygen Demand	18.		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:37	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-09

Client ID: PW-1

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 16:10

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	31.2		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.174	J	mg/l	0.300	0.066	1	01/20/22 10:32	01/20/22 18:50	4,351.1	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:38	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203084-10

Client ID: PW-2

Sample Location: SUFFERN, NY

Date Collected: 01/19/22 16:30

Date Received: 01/19/22

Field Prep: Not Specified

Sample Depth:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	69.8		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.109	J	mg/l	0.300	0.066	1	01/20/22 10:32	01/20/22 18:51	4,351.1	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:38	44,410.4	TL



Project Name: RAMAPO LF**Project Number:** 20010**Lab Number:** L2203084**Report Date:** 02/02/22**SAMPLE RESULTS****Lab ID:** L2203084-11**Client ID:** A-10**Sample Location:** SUFFERN, NY**Date Collected:** 01/19/22 09:00**Date Received:** 01/19/22**Field Prep:** Not Specified**Sample Depth:****Matrix:** Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	11.6		%	0.100	NA	1	-	01/20/22 10:51	121,2540G	RI



Project Name: RAMAPO LF

Lab Number: L2203084

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 09-10 Batch: WG1596251-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	0.022	1	01/20/22 10:32	01/20/22 19:06	4,351.1	AT
General Chemistry - Westborough Lab for sample(s): 02-08 Batch: WG1597278-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	0.022	1	01/24/22 11:28	01/25/22 19:16	121,4500NH3-H	AT
General Chemistry - Westborough Lab for sample(s): 02-06 Batch: WG1597294-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/24/22 07:21	121,2320B	MT
General Chemistry - Westborough Lab for sample(s): 07-10 Batch: WG1597729-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
General Chemistry - Westborough Lab for sample(s): 02-10 Batch: WG1599833-1										
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/31/22 17:10	01/31/22 21:36	44,410.4	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203084

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 09-10 Batch: WG1596251-2								
Nitrogen, Total Kjeldahl	90		-		78-122	-		
General Chemistry - Westborough Lab Associated sample(s): 02-08 Batch: WG1597278-2								
Nitrogen, Total Kjeldahl	91		-		78-122	-		
General Chemistry - Westborough Lab Associated sample(s): 02-06 Batch: WG1597294-2								
Alkalinity, Total	107		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 07-10 Batch: WG1597729-2								
Alkalinity, Total	107		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 02-10 Batch: WG1599833-2								
Chemical Oxygen Demand	98		-		90-110	-		

Matrix Spike Analysis Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 09-10				QC Batch ID: WG1596251-4			QC Sample: L2200023-52			Client ID: MS Sample		
Nitrogen, Total Kjeldahl	0.552	8	4.76	53	Q	-	-		77-111	-		24
General Chemistry - Westborough Lab Associated sample(s): 02-08				QC Batch ID: WG1597278-4			QC Sample: L2203084-02			Client ID: UP-OS		
Nitrogen, Total Kjeldahl	0.474	8	7.27	85		-	-		77-111	-		24
General Chemistry - Westborough Lab Associated sample(s): 02-06				QC Batch ID: WG1597294-4			QC Sample: L2202958-16			Client ID: MS Sample		
Alkalinity, Total	16.2	100	133	117	Q	-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 07-10				QC Batch ID: WG1597729-4			QC Sample: L2203437-04			Client ID: MS Sample		
Alkalinity, Total	56.4	100	171	115		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 02-10				QC Batch ID: WG1599833-3			QC Sample: L2203084-02			Client ID: UP-OS		
Chemical Oxygen Demand	ND	47.6	53	111	Q	-	-		90-110	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 11 QC Batch ID: WG1596109-1 QC Sample: L2202951-01 Client ID: DUP Sample						
Solids, Total	83.6	84.2	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 09-10 QC Batch ID: WG1596251-3 QC Sample: L2200023-52 Client ID: DUP Sample						
Nitrogen, Total Kjeldahl	0.552	0.263J	mg/l	NC		24
General Chemistry - Westborough Lab Associated sample(s): 02-08 QC Batch ID: WG1597278-3 QC Sample: L2203084-02 Client ID: UP-OS						
Nitrogen, Total Kjeldahl	0.474	0.300	mg/l	45	Q	24
General Chemistry - Westborough Lab Associated sample(s): 02-06 QC Batch ID: WG1597294-3 QC Sample: L2202958-16 Client ID: DUP Sample						
Alkalinity, Total	16.2	16.5	mg CaCO3/L	2		10
General Chemistry - Westborough Lab Associated sample(s): 07-10 QC Batch ID: WG1597729-3 QC Sample: L2203437-04 Client ID: DUP Sample						
Alkalinity, Total	56.4	56.9	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 02-10 QC Batch ID: WG1599833-4 QC Sample: L2203084-02 Client ID: UP-OS						
Chemical Oxygen Demand	ND	ND	mg/l	NC		20

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**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(*)
L2203084-01A	Plastic 250ml unpreserved	A	NA		4.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203084-01B	Plastic 250ml unpreserved	A	NA		4.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203084-02A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-02B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-02C	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-02D	Plastic 250ml unpreserved	B	NA		5.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203084-02E	Plastic 250ml unpreserved	B	NA		5.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203084-02F	Plastic 250ml unpreserved/No Headspace	A	NA		4.3	Y	Absent		ALK-T-2320(14)
L2203084-02G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203084-02H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203084-02I	Plastic 250ml H2SO4 preserved	A	<2	<2	4.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203084-02J	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		TL-6020T(180),FE-6020T(180),BA-6020T(180),SE-6020T(180),NI-6020T(180),CR-6020T(180),K-6020T(180),CA-6020T(180),ZN-6020T(180),CU-6020T(180),NA-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),SB-6020T(180),AS-6020T(180),V-6020T(180),B-UI(180),HARDT-6020(180),AL-6020T(180),CD-6020T(180),MG-6020T(180),AG-6020T(180),HG-T(28),CO-6020T(180)
L2203084-03A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-03B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-03C	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-03D	Plastic 250ml unpreserved	B	NA		5.3	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203084-03E	Plastic 250ml unpreserved	B	NA		5.3	Y	Absent		A2-NY-537-ISOTOPE(14)

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02022218:32
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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203084-03F	Plastic 250ml unpreserved/No Headspace	A	NA		4.3	Y	Absent		ALK-T-2320(14)
L2203084-03G	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203084-03H	Amber 250ml unpreserved	A	7	7	4.3	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203084-03I	Plastic 250ml H2SO4 preserved	A	<2	<2	4.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203084-03J	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		SE-6020T(180),BA-6020T(180),TL-6020T(180),FE-6020T(180),CR-6020T(180),CA-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),V-6020T(180),AS-6020T(180),B-UI(180),SB-6020T(180),AL-6020T(180),MG-6020T(180),AG-6020T(180),HARDT-6020(180),HG-T(28),CD-6020T(180),CO-6020T(180)
L2203084-04A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-04B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-04C	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-04D	Plastic 250ml unpreserved/No Headspace	A	NA		4.3	Y	Absent		ALK-T-2320(14)
L2203084-04E	Plastic 250ml H2SO4 preserved	A	<2	<2	4.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203084-04F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		TL-6020T(180),FE-6020T(180),BA-6020T(180),SE-6020T(180),K-6020T(180),NI-6020T(180),CA-6020T(180),CR-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),B-UI(180),V-6020T(180),AS-6020T(180),SB-6020T(180),HG-T(28),AG-6020T(180),AL-6020T(180),CD-6020T(180),HARDT-6020(180),MG-6020T(180),CO-6020T(180)
L2203084-05A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-05B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-05C	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-05D	Plastic 250ml unpreserved/No Headspace	A	NA		4.3	Y	Absent		ALK-T-2320(14)
L2203084-05E	Plastic 250ml H2SO4 preserved	A	<2	<2	4.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)

Project Name: RAMAPO LF
Project Number: 20010

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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203084-05F	Plastic 250ml HNO3 preserved	A	<2	<2	4.3	Y	Absent		TL-6020T(180),FE-6020T(180),SE-6020T(180),BA-6020T(180),CR-6020T(180),K-6020T(180),CA-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),SB-6020T(180),V-6020T(180),AS-6020T(180),B-UI(180),AG-6020T(180),HARDT-6020(180),HG-T(28),AL-6020T(180),CD-6020T(180),MG-6020T(180),CO-6020T(180)
L2203084-06A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-06B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-06C	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-06D	Plastic 250ml unpreserved/No Headspace	B	NA		5.3	Y	Absent		ALK-T-2320(14)
L2203084-06E	Plastic 250ml H2SO4 preserved	B	<2	<2	5.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203084-06F	Plastic 250ml HNO3 preserved	B	<2	<2	5.3	Y	Absent		FE-6020T(180),BA-6020T(180),SE-6020T(180),TL-6020T(180),NI-6020T(180),CA-6020T(180),K-6020T(180),CR-6020T(180),NA-6020T(180),CU-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),B-UI(180),V-6020T(180),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180),HARDT-6020(180),HG-T(28),MG-6020T(180),AL-6020T(180),CO-6020T(180)
L2203084-07A	Vial HCl preserved	B	NA		5.3	Y	Absent		NYTCL-8260(14)
L2203084-07B	Vial HCl preserved	B	NA		5.3	Y	Absent		NYTCL-8260(14)
L2203084-07C	Vial HCl preserved	B	NA		5.3	Y	Absent		NYTCL-8260(14)
L2203084-07D	Plastic 250ml unpreserved/No Headspace	B	NA		5.3	Y	Absent		ALK-T-2320(14)
L2203084-07E	Plastic 250ml H2SO4 preserved	B	<2	<2	5.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203084-07F	Plastic 250ml HNO3 preserved	B	<2	<2	5.3	Y	Absent		SE-6020T(180),FE-6020T(180),TL-6020T(180),BA-6020T(180),CR-6020T(180),K-6020T(180),CA-6020T(180),NI-6020T(180),ZN-6020T(180),NA-6020T(180),CU-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),B-UI(180),SB-6020T(180),AS-6020T(180),V-6020T(180),AG-6020T(180),CD-6020T(180),MG-6020T(180),AL-6020T(180),HARDT-6020(180),HG-T(28),CO-6020T(180)
L2203084-08A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-08B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-08C	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)

Project Name: RAMAPO LF
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Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203084-08D	Plastic 250ml unpreserved/No Headspace	A	NA		4.3	Y	Absent		ALK-T-2320(14)
L2203084-08E	Plastic 250ml H2SO4 preserved	A	<2	<2	4.3	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203084-08F	Plastic 250ml HNO3 preserved	B	<2	<2	5.3	Y	Absent		TL-6020T(180),BA-6020T(180),FE-6020T(180),SE-6020T(180),CA-6020T(180),CR-6020T(180),K-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),MG-6020T(180),HG-T(28),AG-6020T(180),AL-6020T(180),CD-6020T(180),HARDT-6020(180),CO-6020T(180)
L2203084-09A	Vial HCl preserved	B	NA		5.3	Y	Absent		524.2(14)
L2203084-09B	Vial HCl preserved	B	NA		5.3	Y	Absent		524.2(14)
L2203084-09C	Vial HCl preserved	B	NA		5.3	Y	Absent		524.2(14)
L2203084-09D	Plastic 250ml unpreserved/No Headspace	B	NA		5.3	Y	Absent		ALK-T-2320(14)
L2203084-09E	Plastic 250ml H2SO4 preserved	B	<2	<2	5.3	Y	Absent		TKN-351(28),COD-410-LOW(28)
L2203084-09F	Plastic 250ml HNO3 preserved	B	<2	<2	5.3	Y	Absent		CD-2008T(180),NI-2008T(180),CA-UI(180),K-UI(180),ZN-2008T(180),BE-2008T(180),CO-UI(180),FE-UI(180),V-2008T(180),CU-2008T(180),MG-UI(180),HARDU(180),HG-U(28),AG-2008T(180),AS-2008T(180),SE-2008T(180),B-UI(180),AL-UI(180),MN-UI(180),NA-UI(180),BA-2008T(180),SB-2008T(180),TL-2008T(180),CR-2008T(180),PB-2008T(180)
L2203084-10A	Vial HCl preserved	B	NA		5.3	Y	Absent		524.2(14)
L2203084-10B	Vial HCl preserved	B	NA		5.3	Y	Absent		524.2(14)
L2203084-10C	Vial HCl preserved	B	NA		5.3	Y	Absent		524.2(14)
L2203084-10D	Plastic 250ml unpreserved/No Headspace	B	NA		5.3	Y	Absent		ALK-T-2320(14)
L2203084-10E	Plastic 250ml H2SO4 preserved	B	<2	<2	5.3	Y	Absent		TKN-351(28),COD-410-LOW(28)
L2203084-10F	Plastic 250ml HNO3 preserved	B	<2	<2	5.3	Y	Absent		CD-2008T(180),NI-2008T(180),CA-UI(180),CO-UI(180),ZN-2008T(180),BE-2008T(180),K-UI(180),CU-2008T(180),V-2008T(180),HARDU(180),FE-UI(180),MG-UI(180),HG-U(28),AS-2008T(180),AG-2008T(180),SE-2008T(180),B-UI(180),MN-UI(180),BA-2008T(180),AL-UI(180),NA-UI(180),SB-2008T(180),CR-2008T(180),PB-2008T(180),TL-2008T(180)
L2203084-11A	Vial Large Septa unpreserved (4oz)	B	NA		5.3	Y	Absent		NYTCL-8260-R2(14)

Project Name: RAMAPO LF**Lab Number:** L2203084**Project Number:** 20010**Report Date:** 02/02/22**Container Information**

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203084-11B	Glass 60ml unpreserved split	B	NA		5.3	Y	Absent		TS(7)
L2203084-11E	Vial Large Septa unpreserved (4oz)	B	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),B-TI(180),TL-TI(180),AL-TI(180),PB-TI(180),SE-TI(180),ZN-TI(180),CU-TI(180),SB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),CA-TI(180),CD-TI(180),NA-TI(180)
L2203084-11X	Vial MeOH preserved split	B	NA		5.3	Y	Absent		NYTCL-8260-R2(14)
L2203084-11Y	Vial Water preserved split	B	NA		5.3	Y	Absent	22-JAN-22 03:10	NYTCL-8260-R2(14)
L2203084-11Z	Vial Water preserved split	B	NA		5.3	Y	Absent	22-JAN-22 03:10	NYTCL-8260-R2(14)
L2203084-12A	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)
L2203084-12B	Vial HCl preserved	A	NA		4.3	Y	Absent		NYTCL-8260(14)

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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 (PFSA's)		
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	PFEEESA	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

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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: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
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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. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: 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.

Report Format: DU Report with 'J' Qualifiers



Project Name: RAMAPO LF
Project Number: 20010

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Data Qualifiers

- 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 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.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203084
Report Date: 02/02/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- 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.



Alpha Analytical, Inc.Facility: **Company-wide**Department: **Quality Assurance**Title: **Certificate/Approval Program Summary**ID No.: **17873**

Revision 19

Published Date: 4/2/2021 1:14:23 PM

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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 625/625.1:** alpha-Terpineol**EPA 8260C/8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D/8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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, SM9222D.****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, EPA 537.1.****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 Westborough, MA 01581 8 Walkup Dr. TEL: 508-898-9220 FAX: 508-898-9193		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 <u>1</u> of <u>2</u>		Date Rec'd in Lab <u>01/19/22</u>		ALPHA Job # <u>L2203084</u>			
Client Information Client: <u>Sterling Env.</u> Address: <u>24 Wade Rd</u> <u>Catnam, NY 12110</u> Phone: <u>518 456-4900</u> Fax: _____ Email: _____		Project Information Project Name: <u>Ramapo LF</u> Project Location: <u>Suffern, NY</u> Project # <u>20010</u> (Use Project name as Project #) ☐ Project Manager: <u>Andrew Millsbaugh</u> ALPHAQuote #: _____ Turn-Around Time Standard ☒ Rush (only if pre approved) ☐ Due Date: _____ # of Days: _____		Deliverables ☒ ASP-A ☒ ASP-B ☐ EQulS (1 File) ☒ EQulS (4 File) ☐ Other <u>Cat B for PFAS + 140 dioxane only</u>		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: _____	
These samples have been previously analyzed by Alpha ☐		Other project specific requirements/comments: <u>andrew.millsbaugh@sterlingenvironmental.com</u> <u>paul.scholar@sterlingenvironmental.com</u> Please specify Metals or TAL: <u>Total Metals - Al, Sb, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V, Zn ++ VOCs = 1,1-Dichloroethane, Benzene, Chlorobenzene, Vinyl Chloride</u>		ANALYSIS Total Metals * Hardness TKN, COD AA-NV-537 Isotope PFAS 1,4-Dioxane 8270D SIM ALK-T-2320 VOCs + EPA 8260C		Sample Filtration ☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)		Sample Specific Comments		Total Bottles	
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials						
0308401	EB01182022	1-19-22	950	LW	PWS						
02	UP-OS		1030	GW							
03	UP-I		1110								
04	8-R		1230								
05	8-I		1320								
06	8-OS		1400								
07	4-OS		1445								
08	2-OS		1540								
09	PW-1		1610	DW							
10	PW-2		1630	DW							
Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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 Preservative		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.)			
Relinquished By: <u>[Signature]</u>		Date/Time: <u>1-19-22 1746</u>		Received By: <u>[Signature]</u>		Date/Time: <u>1-19-22 1746</u>					
Relinquished By: <u>[Signature]</u>		Date/Time: <u>1/19/22 1746</u>		Received By: <u>[Signature]</u>		Date/Time: <u>1/19/22 1930</u>					
Relinquished By: <u>[Signature]</u>		Date/Time: <u>1/19/22 2330</u>		Received By: <u>[Signature]</u>		Date/Time: <u>1/19/22 2330</u>					

L2203084

	Same as Client Info
PO #	

Please identify below location of applicable disposal facilities.

☐ NJ ☐ NY
☐ Other:

Total Bottles

PWS
PWS

B	A

Date/Time

1/19/22 1746
1/19/22 1900
1/19/22 2330



ANALYTICAL REPORT

Lab Number:	L2203437
Client:	Sterling Environmental Engineering 24 Wade Road Latham, NY 12110
ATTN:	Andrew Millspaugh
Phone:	(518) 456-4900
Project Name:	RAMAPO LF
Project Number:	20010
Report Date:	02/02/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

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: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2203437-01	SVWC-93	WATER	SUFFERN, NY	01/20/22 09:15	01/20/22
L2203437-02	SVWC-94	WATER	SUFFERN, NY	01/20/22 09:30	01/20/22
L2203437-03	SVWC-95	WATER	SUFFERN, NY	01/20/22 10:00	01/20/22
L2203437-04	SVWC-96	WATER	SUFFERN, NY	01/20/22 09:45	01/20/22
L2203437-05	7-OS	WATER	SUFFERN, NY	01/20/22 12:55	01/20/22
L2203437-06	3-OS/I	WATER	SUFFERN, NY	01/20/22 13:45	01/20/22
L2203437-07	1-OS	WATER	SUFFERN, NY	01/20/22 14:40	01/20/22
L2203437-08	TB01202022	WATER	SUFFERN, NY	01/20/22 00:00	01/20/22

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

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: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Case Narrative (continued)

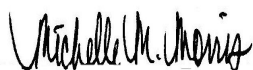
Report Submission

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

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:



Michelle M. Morris

Title: Technical Director/Representative

Date: 02/02/22

ORGANICS

VOLATILES

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-01
 Client ID: SVWC-93
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:15
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 09:24
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	98		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-02
 Client ID: SVWC-94
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:30
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 09:48
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	99		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-03
 Client ID: SVWC-95
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 10:00
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 10:11
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-04
 Client ID: SVWC-96
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:45
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 10:34
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	99		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-05
 Client ID: 7-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 12:55
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 10:57
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	97		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-06
 Client ID: 3-OS/I
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 13:45
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 11:20
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-07
 Client ID: 1-OS
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 14:40
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 11:43
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	99		70-130

Project Name: RAMAPO LF**Lab Number:** L2203437**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203437-08
 Client ID: TB01202022
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 00:00
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8260C
 Analytical Date: 01/31/22 12:06
 Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Benzene	ND		ug/l	0.50	0.16	1
Vinyl chloride	ND		ug/l	1.0	0.07	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/31/22 09:01
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-08 Batch: WG1600199-5					
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chlorobenzene	ND		ug/l	2.5	0.70
Benzene	ND		ug/l	0.50	0.16
Vinyl chloride	ND		ug/l	1.0	0.07

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-08 Batch: WG1600199-3 WG1600199-4								
1,1-Dichloroethane	100		97		70-130	3		20
Chlorobenzene	100		93		75-130	7		20
Benzene	100		92		70-130	8		20
Vinyl chloride	98		90		55-140	9		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		99		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	99		100		70-130

METALS

Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-01

Date Collected: 01/20/22 09:15

Client ID: SVWC-93

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Barium, Total	0.00775		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Boron, Total	0.024	J	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 13:59	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Calcium, Total	18.3		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Chromium, Total	0.00052	J	mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Copper, Total	0.00262		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Magnesium, Total	4.92		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:50	EPA 7470A	1,7470A	ZK
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Potassium, Total	1.74		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Sodium, Total	46.1		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Zinc, Total	0.01706		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	66.08		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:53	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-02

Date Collected: 01/20/22 09:30

Client ID: SVWC-94

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Barium, Total	0.01180		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Boron, Total	0.025	J	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 14:39	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Calcium, Total	20.8		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Chromium, Total	ND		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Copper, Total	0.00362		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Magnesium, Total	5.56		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 11:54	EPA 7470A	1,7470A	ZK
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Potassium, Total	1.78		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Sodium, Total	50.8		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Zinc, Total	0.01793		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	74.72		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 16:57	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-03

Date Collected: 01/20/22 10:00

Client ID: SVWC-95

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Barium, Total	0.01125		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Boron, Total	0.026	J	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 14:45	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Calcium, Total	22.5		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Chromium, Total	0.00020	J	mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Copper, Total	0.03104		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Lead, Total	0.00061	J	mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Magnesium, Total	6.27		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Manganese, Total	0.03345		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Mercury, Total	0.00015	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 12:05	EPA 7470A	1,7470A	ZK
Nickel, Total	0.00064	J	mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Potassium, Total	1.65		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Sodium, Total	44.5		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Thallium, Total	0.00016	J	mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Zinc, Total	0.05367		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	82.13		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 17:17	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-04

Date Collected: 01/20/22 09:45

Client ID: SVWC-96

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Barium, Total	0.00860		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Boron, Total	0.031		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 14:50	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Calcium, Total	21.8		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Chromium, Total	ND		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Copper, Total	0.00465		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Magnesium, Total	5.92		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Mercury, Total	0.00011	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 12:08	EPA 7470A	1,7470A	ZK
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Potassium, Total	1.45		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Sodium, Total	54.9		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Zinc, Total	0.01458		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	78.81		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 17:22	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-05

Date Collected: 01/20/22 12:55

Client ID: 7-OS

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0213		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Barium, Total	0.01567		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Boron, Total	0.152		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 14:55	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Calcium, Total	40.8		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Chromium, Total	0.00441		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00109		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Copper, Total	0.00070	J	mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Iron, Total	0.0448	J	mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Magnesium, Total	8.80		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Manganese, Total	0.01006		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Mercury, Total	0.00014	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 12:12	EPA 7470A	1,7470A	ZK
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Potassium, Total	3.72		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Sodium, Total	12.7		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Zinc, Total	0.01157		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	138.2		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 17:26	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-06

Date Collected: 01/20/22 13:45

Client ID: 3-OS/I

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.0124		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00019	J	mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Barium, Total	0.01215		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Boron, Total	0.059		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 15:00	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Calcium, Total	85.7		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Chromium, Total	0.1541		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00093		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Copper, Total	0.00142		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Iron, Total	1.21		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Magnesium, Total	12.8		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Manganese, Total	0.1074		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Mercury, Total	ND		mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 12:15	EPA 7470A	1,7470A	ZK
Nickel, Total	0.1223		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Potassium, Total	2.57		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Sodium, Total	26.8		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Zinc, Total	0.01024		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	266.8		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 17:31	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-07

Date Collected: 01/20/22 14:40

Client ID: 1-OS

Date Received: 01/20/22

Sample Location: SUFFERN, NY

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	0.150		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Antimony, Total	0.00044	J	mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Arsenic, Total	0.00021	J	mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Barium, Total	0.00827		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Boron, Total	0.067		mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 15:05	EPA 3005A	19,200.7	EW
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Calcium, Total	48.8		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Chromium, Total	0.05443		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Cobalt, Total	0.00077		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Copper, Total	0.00199		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Iron, Total	0.450		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Magnesium, Total	10.5		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Manganese, Total	2.215		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Mercury, Total	0.00012	J	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 12:18	EPA 7470A	1,7470A	ZK
Nickel, Total	0.03813		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Potassium, Total	2.06		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Sodium, Total	90.6		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Thallium, Total	ND		mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Zinc, Total	0.01204		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV
Total Hardness (by calculation) - Mansfield Lab											
Hardness	165.0		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 17:36	EPA 3005A	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1596218-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Antimony, Total	ND		mg/l	0.00400	0.00042	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Barium, Total	ND		mg/l	0.00050	0.00017	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Calcium, Total	ND		mg/l	0.100	0.0394	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Chromium, Total	ND		mg/l	0.00100	0.00017	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Copper, Total	ND		mg/l	0.00100	0.00038	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Iron, Total	ND		mg/l	0.0500	0.0191	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Lead, Total	ND		mg/l	0.00100	0.00034	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Manganese, Total	ND		mg/l	0.00100	0.00044	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Nickel, Total	ND		mg/l	0.00200	0.00055	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Potassium, Total	ND		mg/l	0.100	0.0309	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Selenium, Total	ND		mg/l	0.00500	0.00173	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Silver, Total	ND		mg/l	0.00040	0.00016	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Sodium, Total	ND		mg/l	0.100	0.0293	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Thallium, Total	0.00026	J	mg/l	0.00100	0.00014	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV
Zinc, Total	ND		mg/l	0.01000	0.00341	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness (by calculation) - Mansfield Lab for sample(s): 01-07 Batch: WG1596218-1										
Hardness	ND		mg/l	0.5400	NA	1	01/25/22 06:08	01/25/22 15:14	1,6020B	SV



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1596219-1									
Mercury, Total	ND	mg/l	0.00020	0.00009	1	01/25/22 09:05	01/28/22 10:15	1,7470A	ZK

Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG1596220-1									
Boron, Total	ND	mg/l	0.030	0.002	1	01/25/22 06:08	01/25/22 12:44	19,200.7	EW

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1596218-2								
Aluminum, Total	100		-		80-120	-		
Antimony, Total	86		-		80-120	-		
Arsenic, Total	102		-		80-120	-		
Barium, Total	101		-		80-120	-		
Beryllium, Total	105		-		80-120	-		
Cadmium, Total	100		-		80-120	-		
Calcium, Total	88		-		80-120	-		
Chromium, Total	97		-		80-120	-		
Cobalt, Total	98		-		80-120	-		
Copper, Total	103		-		80-120	-		
Iron, Total	103		-		80-120	-		
Lead, Total	101		-		80-120	-		
Magnesium, Total	100		-		80-120	-		
Manganese, Total	98		-		80-120	-		
Nickel, Total	100		-		80-120	-		
Potassium, Total	96		-		80-120	-		
Selenium, Total	95		-		80-120	-		
Silver, Total	106		-		80-120	-		
Sodium, Total	98		-		80-120	-		
Thallium, Total	104		-		80-120	-		
Vanadium, Total	98		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1596218-2					
Zinc, Total	102	-	80-120	-	
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 01-07 Batch: WG1596218-2					
Hardness	95	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1596219-2					
Mercury, Total	104	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG1596220-2					
Boron, Total	109	-	85-115	-	

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07			QC Batch ID: WG1596218-3		WG1596218-4	QC Sample: L2203086-05			Client ID: MS Sample			
Aluminum, Total	0.0300	2	2.12	104		2.22	110		75-125	5		20
Antimony, Total	0.00046J	0.5	0.5175	104		0.4890	98		75-125	6		20
Arsenic, Total	0.00070	0.12	0.1267	105		0.1284	106		75-125	1		20
Barium, Total	0.2859	2	2.368	104		2.376	104		75-125	0		20
Beryllium, Total	ND	0.05	0.05211	104		0.06039	121		75-125	15		20
Cadmium, Total	ND	0.053	0.05407	102		0.05462	103		75-125	1		20
Calcium, Total	193.	10	210	170	Q	217	240	Q	75-125	3		20
Chromium, Total	0.00027J	0.2	0.1955	98		0.2066	103		75-125	6		20
Cobalt, Total	0.00020J	0.5	0.4983	100		0.5129	102		75-125	3		20
Copper, Total	ND	0.25	0.2582	103		0.2574	103		75-125	0		20
Iron, Total	0.854	1	1.97	112		1.90	105		75-125	4		20
Lead, Total	ND	0.53	0.5490	104		0.5585	105		75-125	2		20
Magnesium, Total	59.9	10	69.4	95		72.2	123		75-125	4		20
Manganese, Total	0.6083	0.5	1.109	100		1.134	105		75-125	2		20
Nickel, Total	ND	0.5	0.5066	101		0.5081	102		75-125	0		20
Potassium, Total	3.89	10	13.9	100		14.5	106		75-125	4		20
Selenium, Total	ND	0.12	0.101	84		0.100	83		75-125	1		20
Silver, Total	ND	0.05	0.05346	107		0.05364	107		75-125	0		20
Sodium, Total	332.	10	333	10	Q	344	120		75-125	3		20
Thallium, Total	0.00024J	0.12	0.1287	107		0.1289	107		75-125	0		20
Vanadium, Total	ND	0.5	0.5126	102		0.5233	105		75-125	2		20

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596218-3 WG1596218-4 QC Sample: L2203086-05 Client ID: MS Sample									
Zinc, Total	0.00990J	0.5	0.5163	103	0.5230	105	75-125	1	20
Total Hardness (by calculation) - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596218-3 WG1596218-4 QC Sample: L2203086-05 Client ID: MS Sample									
Hardness	728.9	66.2	809.8	122	839.4	167	Q 75-125	4	20
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596219-3 WG1596219-4 QC Sample: L2203086-05 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00510	102	0.00504	101	75-125	1	20
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596220-3 QC Sample: L2203084-02 Client ID: MS Sample									
Boron, Total	0.007J	1	1.12	112	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596220-7 QC Sample: L2203084-03 Client ID: MS Sample									
Boron, Total	0.004J	1	1.11	111	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596220-4 QC Sample: L2203084-02 Client ID: DUP Sample						
Boron, Total	0.007J	0.008J	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596220-8 QC Sample: L2203084-03 Client ID: DUP Sample						
Boron, Total	0.004J	0.004J	mg/l	NC		20

Project Name: RAMAPO LF
Project Number: 20010

**Lab Serial Dilution
 Analysis
 Batch Quality Control**

Lab Number: L2203437
Report Date: 02/02/22

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-07 QC Batch ID: WG1596218-6 QC Sample: L2203086-05 Client ID: DUP Sample						
Barium, Total	0.2859	0.2822	mg/l	1		20
Calcium, Total	193.	205.	mg/l	6		20
Magnesium, Total	59.9	60.6	mg/l	1		20
Manganese, Total	0.6083	0.6008	mg/l	1		20
Potassium, Total	3.89	3.83	mg/l	2		20
Sodium, Total	332.	330.	mg/l	1		20

INORGANICS & MISCELLANEOUS

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-01

Client ID: SVWC-93

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:15

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	46.4		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.155	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:12	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:29	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-02

Client ID: SVWC-94

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:30

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	53.1		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.137	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:15	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:30	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-03

Client ID: SVWC-95

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 10:00

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	55.6		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.250	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:16	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:30	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-04

Client ID: SVWC-96

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:45

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	56.4		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.079	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:17	121,4500NH3-H	AT
Chemical Oxygen Demand	4.8	J	mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:30	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-05

Client ID: 7-OS

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 12:55

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	133.		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.193	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:18	121,4500NH3-H	AT
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:30	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-06

Client ID: 3-OS/I

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 13:45

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	265.		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.216	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:19	121,4500NH3-H	AT
Chemical Oxygen Demand	4.8	J	mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:30	44,410.4	TL



Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203437

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203437-07

Client ID: 1-OS

Sample Location: SUFFERN, NY

Date Collected: 01/20/22 14:40

Date Received: 01/20/22

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	285.		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
Nitrogen, Total Kjeldahl	0.222	J	mg/l	0.300	0.066	1	01/25/22 09:45	01/25/22 22:20	121,4500NH3-H	AT
Chemical Oxygen Demand	11.		mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:30	44,410.4	TL



Project Name: RAMAPO LF

Lab Number: L2203437

Project Number: 20010

Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1597729-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
General Chemistry - Westborough Lab for sample(s): 01-07 Batch: WG1597766-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	0.022	1	01/25/22 09:45	01/25/22 21:59	121,4500NH3-H	AT
General Chemistry - Westborough Lab for sample(s): 05-07 Batch: WG1597796-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/25/22 07:41	121,2320B	MT
General Chemistry - Westborough Lab for sample(s): 01-07 Batch: WG1598922-1										
Chemical Oxygen Demand	ND		mg/l	10	2.7	1	01/27/22 16:30	01/27/22 19:28	44,410.4	TL

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1597729-2								
Alkalinity, Total	107		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-07 Batch: WG1597766-2								
Nitrogen, Total Kjeldahl	84		-		78-122	-		
General Chemistry - Westborough Lab Associated sample(s): 05-07 Batch: WG1597796-2								
Alkalinity, Total	106		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-07 Batch: WG1598922-2								
Chemical Oxygen Demand	102		-		90-110	-		

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1597729-4 QC Sample: L2203437-04 Client ID: SVWC-96												
Alkalinity, Total	56.4	100	171	115		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1597766-4 QC Sample: L2203437-01 Client ID: SVWC-93												
Nitrogen, Total Kjeldahl	0.155J	8	6.84	86		-	-		77-111	-		24
General Chemistry - Westborough Lab Associated sample(s): 05-07 QC Batch ID: WG1597796-4 QC Sample: L2200023-79 Client ID: MS Sample												
Alkalinity, Total	56.4	100	171	115		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1598922-3 QC Sample: L2203437-01 Client ID: SVWC-93												
Chemical Oxygen Demand	ND	47.6	47	99		-	-		90-110	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1597729-3 QC Sample: L2203437-04 Client ID: SVWC-96						
Alkalinity, Total	56.4	56.9	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1597766-3 QC Sample: L2203437-01 Client ID: SVWC-93						
Nitrogen, Total Kjeldahl	0.155J	0.233J	mg/l	NC		24
General Chemistry - Westborough Lab Associated sample(s): 05-07 QC Batch ID: WG1597796-3 QC Sample: L2200023-79 Client ID: DUP Sample						
Alkalinity, Total	56.4	56.9	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01-07 QC Batch ID: WG1598922-4 QC Sample: L2203437-01 Client ID: SVWC-93						
Chemical Oxygen Demand	ND	ND	mg/l	NC		20

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02022217:29
Lab Number: L2203437
Report Date: 02/02/22

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203437-01A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-01B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-01C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-01D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)
L2203437-01E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		BA-6020T(180),TL-6020T(180),SE-6020T(180),FE-6020T(180),K-6020T(180),NI-6020T(180),CA-6020T(180),CR-6020T(180),ZN-6020T(180),NA-6020T(180),CU-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),B-UI(180),V-6020T(180),MG-6020T(180),AL-6020T(180),HARDT-6020(180),AG-6020T(180),CD-6020T(180),HG-T(28),CO-6020T(180)
L2203437-01F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-02A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-02B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-02C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-02D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)
L2203437-02E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		TL-6020T(180),BA-6020T(180),FE-6020T(180),SE-6020T(180),K-6020T(180),CA-6020T(180),NI-6020T(180),CR-6020T(180),NA-6020T(180),ZN-6020T(180),CU-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),AS-6020T(180),B-UI(180),SB-6020T(180),V-6020T(180),AG-6020T(180),HARDT-6020(180),CD-6020T(180),MG-6020T(180),AL-6020T(180),HG-T(28),CO-6020T(180)
L2203437-02F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-03A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02022217:29
Lab Number: L2203437
Report Date: 02/02/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203437-03B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-03C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-03D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)
L2203437-03E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		FE-6020T(180),TL-6020T(180),BA-6020T(180),SE-6020T(180),CA-6020T(180),CR-6020T(180),NI-6020T(180),K-6020T(180),NA-6020T(180),ZN-6020T(180),CU-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),SB-6020T(180),V-6020T(180),AS-6020T(180),B-UI(180),HARDT-6020(180),AL-6020T(180),MG-6020T(180),AG-6020T(180),CD-6020T(180),HG-T(28),CO-6020T(180)
L2203437-03F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-04A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-04B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-04C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-04D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)
L2203437-04E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		SE-6020T(180),TL-6020T(180),BA-6020T(180),FE-6020T(180),NI-6020T(180),CR-6020T(180),K-6020T(180),CA-6020T(180),CU-6020T(180),ZN-6020T(180),NA-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),AS-6020T(180),SB-6020T(180),V-6020T(180),B-UI(180),HG-T(28),HARDT-6020(180),MG-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),CO-6020T(180)
L2203437-04F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-05A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-05B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-05C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-05D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)

Project Name: RAMAPO LF
Project Number: 20010

Serial_No: 02022217:29
Lab Number: L2203437
Report Date: 02/02/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2203437-05E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		FE-6020T(180),TL-6020T(180),SE-6020T(180),BA-6020T(180),CR-6020T(180),CA-6020T(180),K-6020T(180),NI-6020T(180),NA-6020T(180),ZN-6020T(180),CU-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),AS-6020T(180),B-UI(180),V-6020T(180),SB-6020T(180),HG-T(28),MG-6020T(180),AG-6020T(180),CD-6020T(180),AL-6020T(180),HARDT-6020(180),CO-6020T(180)
L2203437-05F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-06A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-06B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-06C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-06D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)
L2203437-06E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		BA-6020T(180),SE-6020T(180),TL-6020T(180),FE-6020T(180),CA-6020T(180),CR-6020T(180),NI-6020T(180),K-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),V-6020T(180),B-UI(180),SB-6020T(180),AS-6020T(180),HARDT-6020(180),MG-6020T(180),AG-6020T(180),HG-T(28),AL-6020T(180),CD-6020T(180),CO-6020T(180)
L2203437-06F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-07A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-07B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-07C	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-07D	Plastic 250ml unpreserved/No Headspace	B	NA		2.0	Y	Absent		ALK-T-2320(14)
L2203437-07E	Plastic 250ml HNO3 preserved	B	<2	<2	2.0	Y	Absent		TL-6020T(180),BA-6020T(180),FE-6020T(180),SE-6020T(180),CR-6020T(180),K-6020T(180),CA-6020T(180),NI-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),B-UI(180),V-6020T(180),AS-6020T(180),SB-6020T(180),AL-6020T(180),AG-6020T(180),CD-6020T(180),HARDT-6020(180),HG-T(28),MG-6020T(180),CO-6020T(180)
L2203437-07F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.0	Y	Absent		TKN-4500(28),COD-410-LOW(28)
L2203437-08A	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)
L2203437-08B	Vial HCl preserved	B	NA		2.0	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: RAMAPO LF
Project Number: 20010

Serial_No:02022217:29
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Container Information

Container ID Container Type

Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
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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: RAMAPO LF
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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. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: 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.

Report Format: DU Report with 'J' Qualifiers



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Data Qualifiers

- 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 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.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203437
Report Date: 02/02/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

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 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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, SM9222D.**

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, EPA 537.1.

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 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 <u>1/21/22</u>		ALPHA Job # <u>C2203437</u>																																																																																																																																																																																																			
		Project Information Project Name: <u>Ramapo LF</u> Project Location: <u>Suffern, NY</u> Project # <u>20010</u> (Use Project name as Project #) ☐ Project Manager: <u>Andrew Mills Paugh</u> 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 <u>Cut B for PFAS + 1,4 Dioxane only</u>		Billing Information ☒ Same as Client Info PO # _____																																																																																																																																																																																																					
Client Information Client: <u>Sterling Env.</u> Address: <u>24 Wade Rd</u> <u>Latham, NY 12110</u> Phone: <u>518 456-4900</u> Fax: _____ Email: _____		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: _____																																																																																																																																																																																																							
These samples have been previously analyzed by Alpha ☐ Other project specific requirements/comments: <u>andrew.mills paugh@sterlingenvironmental.com</u> <u>paul.scholar@sterlingenvironmental.com</u> Please specify Metals or TAL. VOLs ++ = 1,1 Dichloroethane, Benzene, Chlorobenzene, Vinyl Chloride <u>*TAL Metals = Al, Sb, As, Ba, B, Be, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V, Zn</u>						ANALYSIS <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>#</th> <th>Total Metals</th> <th>Handing SS</th> <th>TKN, COD</th> <th>A3-NP-537</th> <th>Isotope PFAS</th> <th>A2-14 Dioxane</th> <th>8370 D SIM</th> <th>ALK-T-2320</th> <th>+ EPA 8260C</th> <th>VOCs + +</th> </tr> <tr> <td>01</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>02</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>03</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>04</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>05</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>06</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>07</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>08</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </table>		#	Total Metals	Handing SS	TKN, COD	A3-NP-537	Isotope PFAS	A2-14 Dioxane	8370 D SIM	ALK-T-2320	+ EPA 8260C	VOCs + +	01	X	X	X	X	X	X	X	X	X	X	02	X	X	X	X	X	X	X	X	X	X	03	X	X	X	X	X	X	X	X	X	X	04	X	X	X	X	X	X	X	X	X	X	05	X	X	X	X	X	X	X	X	X	X	06	X	X	X	X	X	X	X	X	X	X	07	X	X	X	X	X	X	X	X	X	X	08	X	X	X	X	X	X	X	X	X	X	Sample Filtration ☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)																																																																																																
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ANALYTICAL REPORT

Lab Number:	L2203438
Client:	Sterling Environmental Engineering 24 Wade Road Latham, NY 12110
ATTN:	Andrew Millspaugh
Phone:	(518) 456-4900
Project Name:	RAMAPO LF
Project Number:	20010
Report Date:	02/02/22

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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: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2203438-01	SVWC-94	WATER	SUFFERN, NY	01/20/22 09:30	01/20/22
L2203438-02	SVWC-95	WATER	SUFFERN, NY	01/20/22 10:00	01/20/22
L2203438-03	FB01202022	WATER	SUFFERN, NY	01/20/22 09:00	01/20/22

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

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: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

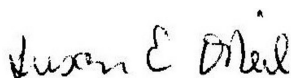
Case Narrative (continued)

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:



Susan O'Neil

Title: Technical Director/Representative

Date: 02/02/22

ORGANICS

SEMIVOLATILES

Project Name: RAMAPO LF**Lab Number:** L2203438**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203438-01
 Client ID: SVWC-94
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:30
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/25/22 19:21
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/24/22 12:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	108.	J	ng/l	150	33.9	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	42			15-110		

Project Name: RAMAPO LF**Lab Number:** L2203438**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203438-01
 Client ID: SVWC-94
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:30
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/26/22 10:06
 Analyst: HT

Extraction Method: ALPHA 23528
 Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.973	J	ng/l	1.84	0.374	1
Perfluoropentanoic Acid (PFPeA)	2.56		ng/l	1.84	0.363	1
Perfluorobutanesulfonic Acid (PFBS)	1.01	J	ng/l	1.84	0.218	1
Perfluorohexanoic Acid (PFHxA)	1.60	J	ng/l	1.84	0.301	1
Perfluoroheptanoic Acid (PFHpA)	0.635	J	ng/l	1.84	0.207	1
Perfluorohexanesulfonic Acid (PFHxS)	0.532	J	ng/l	1.84	0.345	1
Perfluorooctanoic Acid (PFOA)	1.62	J	ng/l	1.84	0.216	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.84	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.631	1
Perfluorononanoic Acid (PFNA)	0.881	J	ng/l	1.84	0.286	1
Perfluorooctanesulfonic Acid (PFOS)	1.88	F	ng/l	1.84	0.462	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.279	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.11	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.595	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.239	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.899	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.532	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.738	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.341	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.300	1
Perfluorotetradecanoic Acid (PFTA)	0.859	JF	ng/l	1.84	0.228	1
PFOA/PFOS, Total	3.50	J	ng/l	1.84	0.216	1

Project Name: RAMAPO LF

Lab Number: L2203438

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203438-01

Date Collected: 01/20/22 09:30

Client ID: SVWC-94

Date Received: 01/20/22

Sample Location: SUFFERN, 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)	80		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	120		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	85		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	81		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	87		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	47		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	34		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	50		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	78		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	64		22-136

Project Name: RAMAPO LF**Lab Number:** L2203438**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203438-02
 Client ID: SVWC-95
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 10:00
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 1,8270D-SIM
 Analytical Date: 01/25/22 19:43
 Analyst: DB

Extraction Method: EPA 3510C
 Extraction Date: 01/24/22 12:44

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	570.		ng/l	139	31.4	1
Surrogate	% Recovery		Qualifier	Acceptance Criteria		
1,4-Dioxane-d8	42			15-110		

Project Name: RAMAPO LF**Lab Number:** L2203438**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203438-02
 Client ID: SVWC-95
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 10:00
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/26/22 10:23
 Analyst: HT

Extraction Method: ALPHA 23528
 Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.38		ng/l	1.88	0.383	1
Perfluoropentanoic Acid (PFPeA)	2.76		ng/l	1.88	0.372	1
Perfluorobutanesulfonic Acid (PFBS)	1.80	J	ng/l	1.88	0.223	1
Perfluorohexanoic Acid (PFHxA)	1.78	J	ng/l	1.88	0.308	1
Perfluoroheptanoic Acid (PFHpA)	1.15	J	ng/l	1.88	0.211	1
Perfluorohexanesulfonic Acid (PFHxS)	0.924	J	ng/l	1.88	0.353	1
Perfluorooctanoic Acid (PFOA)	3.34		ng/l	1.88	0.221	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.88	1.25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.88	0.646	1
Perfluorononanoic Acid (PFNA)	5.92		ng/l	1.88	0.293	1
Perfluorooctanesulfonic Acid (PFOS)	4.58		ng/l	1.88	0.473	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	0.285	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.88	1.14	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	0.608	1
Perfluoroundecanoic Acid (PFUnA)	0.274	J	ng/l	1.88	0.244	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.88	0.920	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.88	0.544	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	0.754	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	0.349	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	0.307	1
Perfluorotetradecanoic Acid (PFTA)	1.04	J	ng/l	1.88	0.233	1
PFOA/PFOS, Total	7.92		ng/l	1.88	0.221	1

Project Name: RAMAPO LF**Lab Number:** L2203438**Project Number:** 20010**Report Date:** 02/02/22**SAMPLE RESULTS**

Lab ID: L2203438-02

Date Collected: 01/20/22 10:00

Client ID: SVWC-95

Date Received: 01/20/22

Sample Location: SUFFERN, 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)	74		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	79		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	118		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	75		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	98		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	75		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	72		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	75		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	35		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	71		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	39		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	64		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	56		22-136

Project Name: RAMAPO LF

Lab Number: L2203438

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203438-03
 Client ID: FB01202022
 Sample Location: SUFFERN, NY

Date Collected: 01/20/22 09:00
 Date Received: 01/20/22
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 134,LCMSMS-ID
 Analytical Date: 01/26/22 10:40
 Analyst: HT

Extraction Method: ALPHA 23528
 Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.94	0.397	1
Perfluoropentanoic Acid (PFPeA)	0.813	J	ng/l	1.94	0.385	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.94	0.231	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.94	0.319	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.94	0.219	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.94	0.366	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.94	0.230	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.94	1.30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.94	0.669	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.94	0.303	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.94	0.490	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.94	0.296	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.94	1.18	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.94	0.630	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.94	0.253	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.94	0.953	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.94	0.564	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.94	0.782	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.94	0.362	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.94	0.318	1
Perfluorotetradecanoic Acid (PFTA)	0.992	J	ng/l	1.94	0.241	1
PFOA/PFOS, Total	ND		ng/l	1.94	0.230	1

Project Name: RAMAPO LF

Lab Number: L2203438

Project Number: 20010

Report Date: 02/02/22

SAMPLE RESULTS

Lab ID: L2203438-03

Date Collected: 01/20/22 09:00

Client ID: FB01202022

Date Received: 01/20/22

Sample Location: SUFFERN, 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)	105		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	121		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	127		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	111		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	114		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	106		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	96		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	55		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	82		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		22-136

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 01/25/22 14:56
Analyst: DB

Extraction Method: EPA 3510C
Extraction Date: 01/24/22 12:44

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-02 Batch: WG1597373-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/26/22 05:08
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1597999-1					
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)	ND		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)	1.11	J	ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

Method Blank Analysis Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/26/22 05:08
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1597999-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	122		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	105		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	101		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	59		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	54		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	60		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65		22-136

Project Name: RAMAPO LF
Project Number: 20010

Lab Number: L2203438
Report Date: 02/02/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/26/22 13:54
Analyst: RS

Extraction Method: ALPHA 23528
Extraction Date: 01/25/22 18:27

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-03 Batch: WG1597999-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	91		10-112

Lab Control Sample Analysis Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203438

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab Associated sample(s): 01-02 Batch: WG1597373-2 WG1597373-3								
1,4-Dioxane	128		139		40-140	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	43		49		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203438

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1597999-2								
Perfluorobutanoic Acid (PFBA)	81		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	84		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	81		-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	82		-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	80		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	83		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	80		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	93		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	82		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	80		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	90		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	79		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	104		-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	90		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	79		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	87		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	82		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	82		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	87		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	88		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	80		-		59-182	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203438

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1597999-2								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	99				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	122				70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	107				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	115				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	100				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	107				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	98				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	103				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	66				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58				10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	67				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70				22-136

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203438

Report Date: 02/02/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-03 Batch: WG1597999-2								
Perfluorooctanesulfonamide (FOSA)	112		-		46-170	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	89				10-112

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203438

Report Date: 02/02/22

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): 01-03 QC Batch ID: WG1597999-3 WG1597999-4 QC Sample: L2203086-05 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	7.80	34.7	36.0	81		36.2	76		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	30.3	34.7	61.4	90		62.2	86		63-161	1		30
Perfluorobutanesulfonic Acid (PFBS)	1.43J	30.8	27.2	84		28.0	80		65-157	3		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	32.5	27.5	85		31.2	90		37-219	13		30
Perfluorohexanoic Acid (PFHxA)	16.6	34.7	44.7	81		46.6	81		69-168	4		30
Perfluoropentanesulfonic Acid (PFPeS)	0.526J	32.6	27.3	82		30.3	85		52-156	10		30
Perfluoroheptanoic Acid (PFHpA)	6.18	34.7	34.6	82		36.3	81		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	5.77	31.8	31.2	80		33.9	83		69-177	8		30
Perfluorooctanoic Acid (PFOA)	4.88	34.7	33.3	82		35.4	82		63-159	6		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	29.6	33.1	57.6	85		62.1	92		49-187	8		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	33.1	29.4	89		30.4	86		61-179	3		30
Perfluorononanoic Acid (PFNA)	1.44J	34.7	28.5	78		31.0	80		68-171	8		30
Perfluorooctanesulfonic Acid (PFOS)	8.30	32.2	38.4	93		39.2	90		52-151	2		30
Perfluorodecanoic Acid (PFDA)	ND	34.7	28.0	81		29.9	80		63-171	7		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	33.3	31.3	94		33.6	94		56-173	7		30
Perfluorononanesulfonic Acid (PFNS)	ND	33.4	27.0	81		30.9	86		48-150	13		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	34.7	34.9	100		36.3	98		60-166	4		30
Perfluoroundecanoic Acid (PFUnA)	ND	34.7	26.5	76		29.9	80		60-153	12		30
Perfluorodecanesulfonic Acid (PFDS)	ND	33.5	26.2	78		30.1	84		38-156	14		30
Perfluorooctanesulfonamide (FOSA)	ND	34.7	26.0	75		31.4F	84		46-170	19		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	34.7	25.4	73		30.9	83		45-170	20		30
Perfluorododecanoic Acid (PFDoA)	ND	34.7	27.8	80		32.3	87		67-153	15		30

Matrix Spike Analysis

Batch Quality Control

Project Name: RAMAPO LF

Project Number: 20010

Lab Number: L2203438

Report Date: 02/02/22

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): 01-03 QC Batch ID: WG1597999-3 WG1597999-4 QC Sample: L2203086-05 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	34.7	26.4	76		29.7	80		48-158	12		30
Perfluorotetradecanoic Acid (PFTA)	0.776J	34.7	28.6	80		28.3	74		59-182	1		30

Surrogate (Extracted Internal Standard)	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	160		149		10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	263	Q	248	Q	12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	249	Q	231	Q	14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		72		27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	70		69		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92		86		55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		93		62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	80		81		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		94		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	112		110		71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		75		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	62		62		22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		97		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		88		62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	47		38		10-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103		104		69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	97		97		62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	103		102		59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		113		70-131

Project Name: RAMAPO LF**Lab Number:** L2203438**Project Number:** 20010**Report Date:** 02/02/22**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(*)
L2203438-01A	Plastic 250ml unpreserved	A	NA		2.5	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203438-01B	Plastic 250ml unpreserved	A	NA		2.5	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203438-01C	Amber 250ml unpreserved	B	7	7	2.0	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203438-01D	Amber 250ml unpreserved	B	7	7	2.0	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203438-02A	Plastic 250ml unpreserved	A	NA		2.5	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203438-02B	Plastic 250ml unpreserved	A	NA		2.5	Y	Absent		A2-NY-537-ISOTOPE(14)
L2203438-02C	Amber 250ml unpreserved	B	7	7	2.0	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203438-02D	Amber 250ml unpreserved	B	7	7	2.0	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2203438-03A	Plastic 250ml unpreserved	A	NA		2.5	Y	Absent		A2-NY-537-ISOTOPE(14)

Project Name: RAMAPO LF
Project Number: 20010

Serial_No:02022210:42
Lab Number: L2203438
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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	PFDaA	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 (PFSA's)		
Perfluorododecanesulfonic Acid	PFDaDS	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	PFEEESA	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: RAMAPO LF
Project Number: 20010

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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: RAMAPO LF
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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. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: 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.

Report Format: DU Report with 'J' Qualifiers



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Data Qualifiers

- 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 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.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

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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 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; 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.

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, SM4500CI-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, SM9222D.**

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, EPA 537.1.

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 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 <u>1/21/22</u>		ALPHA Job # <u>2203438</u>																																																																																																																																																													
		Project Information Project Name: <u>Ramapo LF</u> Project Location: <u>Suffern, NY</u> Project # <u>20010</u> (Use Project name as Project #) ☐		Deliverables ☒ ASP-A ☒ ASP-B ☐ EQuIS (1 File) ☒ EQuIS (4 File) ☐ Other <u>Cut B for PRAS + 1,4 Dioxane Only</u>		Billing Information ☒ Same as Client Info PO #																																																																																																																																																															
Client Information Client: <u>Sterling Env.</u> Address: <u>24 Wade Rd</u> <u>Latham, NY 12110</u> Phone: <u>518 456-4900</u> Fax: Email:		Project Manager: <u>Andrew Millsbaugh</u> ALPHAQuote #: Turn-Around Time Standard ☒ Due Date: Rush (only if pre approved) ☐ # of Days:		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:																																																																																																																																																															
These samples have been previously analyzed by Alpha ☐ Other project specific requirements/comments: <u>andrew.millsbaugh@sterlingenvironmental.com</u> <u>paul.scholar@sterlingenvironmental.com</u> Please specify Metals or TAL. VOLs ++ = 1, 1, 1 Dichloroethane, Benzene, Chlorobenzene, Vinyl Chloride <u>* Total Metals = Al, Sb, As, Ba, B, Be, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Ti, V, Zn</u>		ANALYSIS <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>ALPHA Lab ID (Lab Use Only)</th> <th>Sample ID</th> <th>Collection Date</th> <th>Time</th> <th>Sample Matrix</th> <th>Sampler's Initials</th> <th>Total Metals</th> <th>Handing SS</th> <th>TKN, COD</th> <th>12-NP-537</th> <th>Isotop PRAS</th> <th>12-14 Dioxane</th> <th>8270 D SIM</th> <th>ALK-T-2320</th> <th>++ EPA 8260C</th> <th>VOCs ++</th> </tr> <tr> <td>05438-</td> <td>SVWC-93</td> <td>1-20-22</td> <td>915</td> <td>DW</td> <td>PWS</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>01</td> <td>SVWC-94</td> <td></td> <td>930</td> <td>DW</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>02</td> <td>SVWC-95</td> <td></td> <td>1000</td> <td>DW</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td></td> <td>SVWC-96</td> <td></td> <td>945</td> <td>DW</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td></td> <td>7-OS</td> <td></td> <td>1255</td> <td>GW</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td></td> <td>3-OS/I</td> <td></td> <td>1345</td> <td>GW</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td></td> <td>1-OS</td> <td></td> <td>1440</td> <td>GW</td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>03</td> <td>FBO1202022</td> <td></td> <td>900</td> <td>LW</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> <tr> <td></td> <td>TBO1202022</td> <td></td> <td>-</td> <td>LW</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> </tr> </table>		ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials	Total Metals	Handing SS	TKN, COD	12-NP-537	Isotop PRAS	12-14 Dioxane	8270 D SIM	ALK-T-2320	++ EPA 8260C	VOCs ++	05438-	SVWC-93	1-20-22	915	DW	PWS	X	X	X	X	X	X	X	X	X	X	01	SVWC-94		930	DW		X	X	X	X	X	X	X	X	X	X	02	SVWC-95		1000	DW		X	X	X	X	X	X	X	X	X	X		SVWC-96		945	DW		X	X	X	X	X	X	X	X	X	X		7-OS		1255	GW		X	X	X	X	X	X	X	X	X	X		3-OS/I		1345	GW		X	X	X	X	X	X	X	X	X	X		1-OS		1440	GW		X	X	X	X	X	X	X	X	X	X	03	FBO1202022		900	LW					X					X			TBO1202022		-	LW										X		Sample Filtration ☐ Done ☐ Lab to do Preservation ☐ Lab to do (Please Specify below)	
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Time	Sample Matrix	Sampler's Initials	Total Metals	Handing SS	TKN, COD	12-NP-537	Isotop PRAS	12-14 Dioxane	8270 D SIM	ALK-T-2320	++ EPA 8260C	VOCs ++																																																																																																																																																						
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02	SVWC-95		1000	DW		X	X	X	X	X	X	X	X	X	X																																																																																																																																																						
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	7-OS		1255	GW		X	X	X	X	X	X	X	X	X	X																																																																																																																																																						
	3-OS/I		1345	GW		X	X	X	X	X	X	X	X	X	X																																																																																																																																																						
	1-OS		1440	GW		X	X	X	X	X	X	X	X	X	X																																																																																																																																																						
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Preservative Code: A = None B = HCl C = HNO ₃ D = H ₂ SO ₄ E = NaOH F = MeOH G = NaHSO ₄ H = Na ₂ S ₂ O 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 Preservative		P P P A P V C D A A A B		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.)																																																																																																																																																											
Relinquished By: <u>Paul G...</u> <u>Secured Storage</u> <u>1/20/22 21:45</u> <u>1/20/22 21:45</u>		Date/Time <u>1-20-22 1810</u> <u>1/20/22 21:45</u> <u>1/20/22 21:45</u>		Received By: <u>Secured Storage</u> <u>1/20/22 21:45</u> <u>1/21/22 0050</u>		Date/Time <u>1/20/22 18:10</u> <u>1/20/22 21:45</u> <u>1/21/22 0050</u>																																																																																																																																																															

APPENDIX E

LABORATORY ANALYTICAL RESULTS - LEACHATE / GROUNDWATER



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.
Executive Director

November 13, 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 October 7, 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 M. Dolphin

File: Ramapo Landfill (P) - 2020
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340

Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

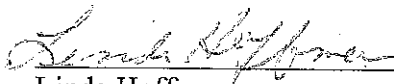
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 10/07/2020 Sample ID: IS-201007-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.16	10/07/2020	BC	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	4	10/13/2020	BC	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	32	10/08/2020	GA	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	2	10/08/2020	GA	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.



March 20, 2020

Linda Hoffman

Laboratory Director

NYSDOH ID No. 10447

No. of pages in this report: 2

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED:

RAMAPO LANDFILL, Hillburn

LOCATION SAMPLED:

Manhole immediately upstream of wetwell near road

SAMPLE ID NO. IS-201007

-RLF

(Permit No. 9 - Expired 8/14/2015)

SEMI-ANNUAL

pH CALIBRATION DATE: 1st 10/6/20 2nd 10/7/20

Buffer 4 Reading: 4.01

Buffer 7 Reading: 7.00

TIME: 1st 7:35A 2nd 7:05A

Buffer 10 Reading: 10.01

Slope: 101

ANALYST: 1st UK 2nd BC

pH = 7.05

****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: _____

Time: _____

SAMPLE INFORMATION

COMPOSITE	DATE	TIME	SAMPLER'S SIGNATURE	pH	TEMP. (°C)
START	10/6/20	8:30am	<i>[Signature]</i>	8.2	13.4
END	10/7/20	8:44pm	<i>[Signature]</i>	6.16	15.3

ROB. COP. TSS (unpreserved)	METALS (RNO ₃)	CHLORIDES, TDS (unpreserved)	AMMONIA, TKN, Total Phosphate (H2SO4)	TOTAL AVAILABLE CYANIDE (NaOH)	Formaldehyde (none)	PENOL (H2SO4)	Oil and Grease, TPE (HCl)	VOCs, EPA 624, (HCl)	SEMI-VOLATILES, EPA 615 (Unpreserved)	PCB's & Pesticides (unpreserved)
COMP.	PLASTIC	1	1000	X						
COMP.	PLASTIC	1	250	X						
COMP.	PLASTIC	1	250							
COMP.	PLASTIC	1	500							
GRAB	PLASTIC	1	500							
GRAB	AMBER	1	1000							
GRAB	AMBER	1	500							
GRAB	AMBER	1	1000							
GRAB	Glass Vial	2	40							
GRAB	Glass Amber	2	1000							
GRAB	Glass Amber	2	1000							

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.

SAMPLES RELINQUISHED BY:

[Signature]

SAMPLES RECEIVED BY:

[Signature]

COMMENTS:

Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Ti, Zn

DATE: 10/7/20

DATE: 10/7/20

11:05am

11:05am

Analytical Results Summary

All projects

0100312-11 (Wastewater)

IS-201007-RLF

 Collected
 10/07/2020 08:44

 Received
 10/07/2020 15:30

 Contact
 Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	10/15/20 11:50	10/15/20 13:00	1.10			0.200	mg/L
Chloride	EPA 300.0	10/10/20 00:20	10/10/20 00:20	163			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	10/09/20 16:38	10/12/20 10:00	0.0210			0.0100	mg/L
Total Dissolved Solids	SM 2540 C-11	10/07/20 18:00	10/09/20 11:30	767			30.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	10/14/20 13:00	10/14/20 14:00	1.54			0.200	mg/L
Total Metals								
Arsenic	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00100	mg/L
Boron	EPA 200.7	10/14/20 06:53	10/19/20 12:59	0.221			0.0500	mg/L
Calcium	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Chromium	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.0100	mg/L
Copper	EPA 200.8	10/12/20 12:14	10/16/20 13:43	0.0015			0.00050	mg/L
Lead	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Manganese	EPA 200.8	10/12/20 12:14	10/16/20 13:43	0.004			0.00050	mg/L
Mercury	EPA 245.1	10/09/20 07:00	10/09/20 14:46	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Nickel	EPA 200.8	10/12/20 12:14	10/16/20 13:43	0.00333			0.00200	mg/L
Selenium	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Silver	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Thallium	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.00200	mg/L
Zinc	EPA 200.8	10/12/20 12:14	10/16/20 13:43	ND	U		0.0300	mg/L

FootNotes

RL - Reporting limit
 MDL - Minimum detection limit
 ND, U - Indicates compound analyzed for but not detected
 J - Indicates estimated value

B - Indicates compound found in associated blank
 E - Concentration exceeds highest calibration standard
 D - Indicates result is based on a dilution
 P - Greater than 25% diff. between 2 GC columns.
 H - Indicates a Hold Time violation

Analytical Results Summary

All projects

0100312-12 (Wastewater)

IS-201007-RLF

 Collected
 10/07/2020 08:44

 Received
 10/07/2020 15:30

 Contact
 Linda Hoffman

Lab Section/	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Analysis								
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	10/09/20 11:48	10/09/20 12:03	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/4500-CN-G	10/09/20 17:00	10/09/20 17:00	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	10/21/20 18:00	10/21/20 18:00	ND	U		5.10	mg/L
Oil & Grease (HEH-SGT)	EPA 1664A (SGT)	10/23/20 18:00	10/23/20 18:00	ND	U		5.00	mg/L
Phenols	EPA 420.1	10/12/20 17:47	10/12/20 17:47	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
1,2-Diphenylhydrazine	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.180	2.00	ug/L
2,4,6-Trichlorophenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.320	5.00	ug/L
3-Nitrotoluene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.108	2.00	ug/L
2-Nitrotoluene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.143	2.00	ug/L
2-Chloronaphthalene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.122	2.00	ug/L
7-Chlorophenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.111	2.00	ug/L
2-Nitrophenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.162	2.00	ug/L
3,3'-Dinitroazobenzene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.110	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0793	2.00	ug/L
2-Nitrochlorobenzene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.131	2.00	ug/L
4-Chloro-3-methylphenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.141	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.136	2.00	ug/L
4-Nitrophenol	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.140	2.00	ug/L
Anthracene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.121	2.00	ug/L
Benzidine	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	7.86	10.0	ug/L
Benzo(a)anthracene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0652	2.00	ug/L
Benzo(k)fluoranthene	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.140	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.112	2.00	ug/L
bis(2-chlorophenyl)ether	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 825.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.132	2.00	ug/L

FootNotes

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Analytical Results Summary

All projects

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IS-201007-RLF

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 Received
 10/07/2020 15:30

 Contact
 Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
BNA+25 Semivolatile Organics - GC/MS								
Diethylhexylphthalate	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.190	2.00	ug/L
Chrysene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.128	2.00	ug/L
Dibenzo(a,h)anthracene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0900	2.00	ug/L
Diethylphthalate	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 625.1	10/08/20 16:25	10/10/20 01:57	0.703	J, B	0.139	2.00	ug/L
Fluoranthene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.125	2.00	ug/L
Fluorene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0574	2.00	ug/L
Isophorone	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0607	2.00	ug/L
Nitrobenzene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.146	2.00	ug/L
n-Nitroso-dimethylamine	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.107	2.00	ug/L
n-Nitroso-di-n-propylamine	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.130	2.00	ug/L
n-Nitrosodimethylamine	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0525	2.00	ug/L
Pentachlorophenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0725	2.00	ug/L
Phenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.115	2.00	ug/L
Pesticides								
4,4'-DDD	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000378	0.0200	ug/L
4,4'-DDE	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000224	0.0200	ug/L
4,4'-DDT	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000319	0.0200	ug/L
alpha-BHC	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000527	0.0200	ug/L
alpha-BHC	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000255	0.0200	ug/L
beta-BHC	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000371	0.0200	ug/L
Chlordane	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000327	0.0500	ug/L
delta-BHC	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000620	0.0200	ug/L
Dieldrin	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000271	0.0200	ug/L

FootNotes

RL - Reporting limit
 MDL - Minimum detection limit
 ND, U - Indicates compound analyzed for but not detected
 J - Indicates estimated value

B - Indicates compound found in associated blank
 E - Concentration exceeds highest calibration standard
 D - Indicates result is based on a dilution
 P - Greater than 25% diff. between 2 GC columns.
 H - Indicates a Hold Time violation

Analytical Results Summary

All projects

0100312-12 (Wastewater)

IS-201007-RLF

 Collected
 10/07/2020 08:44

 Received
 10/07/2020 15:30

 Contact
 Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Pesticides								
Endosulfan I	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000380	0.0200	ug/L
Endosulfan II	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000254	0.0200	ug/L
Endosulfan sulfate	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000138	0.0200	ug/L
Endrin	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000229	0.0200	ug/L
Endrin aldehyde	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000315	0.0200	ug/L
gamma-BHC (Lindane)	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000241	0.0200	ug/L
Heptachlor	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000563	0.0200	ug/L
Heptachlor Epoxide	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000302	0.0200	ug/L
Methoxychlor	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000343	0.0200	ug/L
Toxaphene	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.0237	0.200	ug/L
PCBs								
Aroclor 1216	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.0497	0.500	ug/L
Aroclor 1221	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.352	0.500	ug/L
Aroclor 1222	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.109	0.500	ug/L
Aroclor 1242	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.185	0.500	ug/L
Aroclor 1246	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.0833	0.500	ug/L
Aroclor 1254	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.103	0.500	ug/L
Aroclor 1260	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.0794	0.500	ug/L
VO+15 Volatile Organics - GC/MS								
1,1,1-Trichloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.216	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.293	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.149	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.437	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.210	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.267	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.238	1.00	ug/L
2-Chloroethanol Ether	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.501	1.00	ug/L
Acrolein	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.506	2.00	ug/L
Benzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.129	1.00	ug/L

FootNotes

RL - Reporting limit
 MDL - Minimum detection limit
 ND, U - Indicates compound analyzed for but not detected
 J - Indicates estimated value

B - Indicates compound found in associated blank
 E - Concentration exceeds highest calibration standard
 D - Indicates result is based on a dilution
 P - Greater than 25% diff. between 2 GC columns.
 H - Indicates a Hold Time violation

Analytical Results Summary

All projects
 0100312-12 (Wastewater)

IS-201007-RLF

Collected
 10/07/2020 08:44

Received
 10/07/2020 15:30

Contact
 Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS								
Bromodichloromethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.253	1.00	ug/L
Bromoform	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.372	1.00	ug/L
Chlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.300	1.00	ug/L
Chlorodibromomethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.504	1.00	ug/L
Chloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.293	2.00	ug/L
Chloroform	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.365	1.00	ug/L
Chloromethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.758	1.00	ug/L
cis-1,3-Dichloropropene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.294	1.00	ug/L
Fluorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.244	1.00	ug/L
Methylene Chloride	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.681	1.00	ug/L
Tetrachloroethene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.466	1.00	ug/L
Toluene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.205	1.00	ug/L
trans-1,2-Dichloroethene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.241	1.00	ug/L
trans-1,3-Dichloropropene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.279	1.00	ug/L
Trichloroethene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.146	1.00	ug/L
Vinyl chloride	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.157	1.00	ug/L

FootNotes

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 ND, U - Indicates compound analyzed for but not detected
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B - Indicates compound found in associated blank
 E - Concentration exceeds highest calibration standard
 D - Indicates result is based on a dilution
 P - Greater than 25% diff. between 2 GC columns.
 H - Indicates a Hold Time violation

Analytical Results Summary

All projects

0100312-17 (Drinking Water)

LS-201007-DI

 Collected
 10/07/2020 09:45

 Received
 10/07/2020 15:30

 Contact
 Linda Hoffman

Lab Section/								
Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	10/15/20 11:50	10/15/20 13:00	ND	U		0.200	mg/L
Total Organic Carbon	SM 5310 C-11	10/19/20 10:00	10/20/20 09:02	ND	U		0.500	mg/L

FootNotes

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 MDL - Minimum detection limit
 ND, U - Indicates compound analyzed for but not detected
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B - Indicates compound found in associated blank
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 P - Greater than 25% diff. between 2 GC columns.
 H - Indicates a Hold Time violation

APL

AQUA PRO-TECH LABORATORIES

www.aquaprotechlabs.com

1275 Bloomfield Avenue Building 6
Fairfield, NJ 07004

TEL: 973-227-0422

FAX: 973-227-2813

Confidentiality Level

Low	Medium	High

CHAIN OF CUSTODY

Client:	Rockland County Power District #1	Send Report To:	Linda Hoffman
Address:	4 Route 340 Orangeburg, NY 10962	Address:	4 Route 340 Orangeburg, NY 10962
Phone:	845-385-8926	Phone:	845-385-8926
E-Mail:	l.hoffman@rockland.ny.us	Send Invoices To:	Linda Hoffman
Project Name:	RC201007	Address:	4 Route 340 Orangeburg, NY 10962
Project Manager:	Linda Hoffman	Sampling Location:	Rockland
Project #/PO #:	RC201007	Sampled By:	BC

Turn-Around Time:

X	APL Standard 2 Weeks
	Faster (Choose One Below)
	1 Day
	2 Days
	3 Days
	Other (Specify Below)

Date and Time Required:
*May Need Lab Approval

Report / Electronic Format

X	Results Only / NY ASP-A
	Reduced / NY DEP
	Full / NY DEP / NY ASP-B
	State Form / E2 Reporting

Excel Summary
EquiS
Endnote
Hessite ESD

PWSID #

Container/Special Instructions:

Cooler Temp: 4

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RELINQUISHED BY:	Print: Linda Hoffman	Signature: [Signature]	DATE: 10/7/20
RELINQUISHED BY:	Print: [Signature]	Signature: [Signature]	DATE: 10/7/20
RELINQUISHED BY:	Print: [Signature]	Signature: [Signature]	DATE: 10/7/20

CERTIFICATIONS: NELAP (National Environmental Laboratory Accreditation Program) NJDEP #07010: PADEP #09-02903: NYSDOH #11-1634
By signing this Chain of Custody Agreement, customer expressly agrees to pay APL for all charges, reasonably incurred in connection with analysis and reporting for these samples.



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.
Executive Director

May 24, 2021

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO

AUG 25 2021

Re: Wastewater Analysis Report/s - 2021

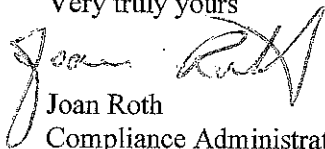
**DEPARTMENT OF
PUBLIC WORKS**

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on July 21, 2021. 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 2022.

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 M. Dolphin, PE

File: Ramapo Landfill (P) - 2021
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340
Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

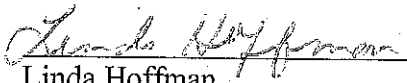
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 07/21/2021 Sample ID: IS-210721-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.54	07/21/2021	BC	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	6	07/27/2021	BC	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	21	07/22/2021	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	2	07/22/21	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.

 August 13, 2021
Linda Hoffman
Laboratory Director
NYSDOH ID No. 10447

No. of pages in this report: 8

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED: **RAMAPO LANDELL, Hillburn**

(Permit No. 9 - Expired 8/14/2025)

SEMI-ANNUAL

LOCATION SAMPLED: Manhole immediately upstream of wetwell near road

ID Format (YY - MM - DD)

SAMPLE ID NO. **IS-210721** - RLF

pH CALIBRATION DATE: 1st **7/20/21** 2nd **7/21/21**
Buffer 4 Reading: **4.01/9.90** Buffer 7 Reading: **7.00/7.00**

TIME: 1st **6:40 AM** 2nd **7:15 AM**
Buffer 10 Reading: **10.01/10.00** Slope: **9.8/19.8**

ANALYST: **LCJ** 2nd **BC**
PA 7 7:05/7:05

*****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	7/20/21	10:32 AM	<i>[Signature]</i>	6.67	20.9
END	7/21/21	8:10 AM	<i>[Signature]</i>	6.84	16.9

TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME ml	BOD, COD, TSS (Unpreserved)	METALS (GNO ₃)	CHLORIDES, TSS (Unpreserved)	AMMONIA, TKN, Total Phosphate (H ₂ SO ₄)	TOTAL AVAILABLE CYANIDE (NaOH)	Formaldehyde (none)	PHENOL (H ₂ SO ₄)	Oil and Grease, TPH (HCl)	VOCS, EPA 624 (HCl)	SEMI-VOLATILES, EPA625 (Unpreserved)	PCBs & Residues (Unpreserved)
COMP.	PLASTIC	1	1000	X										
COMP.	PLASTIC	1	250		X									
COMP.	PLASTIC	1	250			X								
COMP.	PLASTIC	1	500				X							
GRAB	PLASTIC	1	500					X						
GRAB	AMBER	1	1000						X					
GRAB	AMBER	1	500							X				
GRAB	AMBER	1	1000								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.

SAMPLES RELINQUISHED BY: *[Signature]*

DATE: **7/21/21**

12:13 PM

SAMPLES RECEIVED BY: *[Signature]*

DATE: **7/21/21**

12:56 PM

COMMENTS: Metals (10) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, Zn



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1071059-08 (Wastewater)

IS-210721-RLF Comp

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	07/26/21 10:58	07/26/21 13:45	0.706			0.200	mg/L
Chloride	EPA 300.0	07/22/21 08:07	07/22/21 08:07	165			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	07/26/21 17:05	07/27/21 11:00	0.0200			0.0100	mg/L
Total Dissolved Solids	SM 2540 C-11	07/28/21 10:00	07/28/21 14:15	530			20.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	07/26/21 10:55	07/26/21 12:49	0.828			0.200	mg/L
Total Metals								
Antimony	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Arsenic	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00100	mg/L
Boron	EPA 200.7	07/27/21 09:04	08/04/21 15:55	0.126			0.0500	mg/L
Cadmium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Chromium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.0100	mg/L
Copper	EPA 200.8	07/22/21 19:00	08/02/21 19:46	0.0972			0.00200	mg/L
Cobalt	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Manganese	EPA 200.8	07/22/21 19:00	08/02/21 19:46	0.00204			0.00200	mg/L
Mercury	EPA 245.1	08/02/21 12:00	08/02/21 14:25	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Nickel	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Selenium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00600	mg/L
Silver	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Thallium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Zinc	EPA 200.8	07/22/21 19:00	08/02/21 19:46	0.334			0.0300	mg/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	08/03/21 09:42	08/03/21 17:44	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/4500CN-G	08/03/21 11:34	08/03/21 11:34	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	07/27/21 16:00	07/27/21 16:00	ND	U		5.00	mg/L
Oil & Grease (HEM-SGT)	EPA 1664A (SGT)	07/27/21 16:00	07/27/21 16:00	ND	U		5.00	mg/L
Phenols	EPA 420.1	07/29/21 12:00	07/29/21 18:00	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
2,3,4,6-Tetrachlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.210	2.00	ug/L
2,4,5-Trichlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0438	2.00	ug/L
2,4,6-Trichlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.326	5.00	ug/L
2,4-Dinitrotoluene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.108	2.00	ug/L
2,6-Dinitrotoluene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.143	2.00	ug/L
2-Chloronaphthalene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.122	2.00	ug/L
2-Chlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
2-Methylnaphthalene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.103	3.00	ug/L
2-Methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.155	2.00	ug/L
2-Nitroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.101	2.00	ug/L
2-Nitrophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.162	2.00	ug/L
3,3'-Dichlorobenzidine	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.110	2.00	ug/L
3+4-Methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.122	2.00	ug/L
3-Nitroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.134	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0793	2.00	ug/L
4-Bromophenyl-phenyl ether	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.191	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.141	2.00	ug/L
4-Chloroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.162	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.136	2.00	ug/L
4-Nitroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0868	2.00	ug/L
4-Nitrophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.140	2.00	ug/L
Acetophenone	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.170	2.00	ug/L
Aniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.155	2.00	ug/L
Anthracene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.121	2.00	ug/L
Atrazine	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0861	2.00	ug/L

FootNotes

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Report Date: Aug 10, 2021

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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
BNA+25 Semivolatile Organics - GC/MS								
Benzaldehyde	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.134	2.00	ug/L
Benzo(a)anthracene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0852	2.00	ug/L
Benzo(k)fluoranthene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0468	2.00	ug/L
Biphenyl	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.106	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.112	2.00	ug/L
bis(2-chloroethyl)ether	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.132	2.00	ug/L
bis(2-ethylhexyl)phthalate	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.190	2.00	ug/L
Caprolactam	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.193	2.00	ug/L
Carbazole	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.188	2.00	ug/L
Chrysene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.129	2.00	ug/L
Benzo(a,h)anthracene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0900	2.00	ug/L
Dibenzofuran	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.120	2.00	ug/L
Diethylphthalate	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 625.1	07/23/21 10:09	07/28/21 07:59	3.71		0.139	2.00	ug/L
Fluoranthene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.129	2.00	ug/L
Fluorene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0974	2.00	ug/L
Isophorone	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0807	2.00	ug/L
Nitrobenzene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.146	2.00	ug/L
n-Nitroso-di-n-propylamine	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.130	2.00	ug/L
n-Nitrosodiphenylamine	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0626	2.00	ug/L
Pentachlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0725	2.00	ug/L
Phenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.115	2.00	ug/L

FootNotes

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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units

Pesticides

4,4'-DDD	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000378	0.0200	ug/L
4,4'-DDE	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000234	0.0200	ug/L
4,4'-DDT	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000319	0.0200	ug/L
Aldrin	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000527	0.0200	ug/L
alpha-BHC	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000255	0.0200	ug/L
beta-BHC	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000371	0.0200	ug/L
Chlordane	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000327	0.0500	ug/L
delta-BHC	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000320	0.0200	ug/L
Dieldrin	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000271	0.0200	ug/L
Endosulfan I	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000380	0.0200	ug/L
Endosulfan II	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000254	0.0200	ug/L
Endosulfan sulfate	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000138	0.0200	ug/L
Endrin	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000229	0.0200	ug/L
Endrin aldehyde	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000318	0.0200	ug/L
gamma-BHC (Lindane)	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000241	0.0200	ug/L
Heptachlor	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000563	0.0200	ug/L
Heptachlor Epoxide	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000302	0.0200	ug/L
Methoxychlor	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000343	0.0200	ug/L
Toxaphene	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.0237	0.200	ug/L

PCBs

Aroclor-1016	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.0497	0.500	ug/L
Aroclor-1221	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.352	0.500	ug/L
Aroclor-1232	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.109	0.500	ug/L
Aroclor-1242	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.185	0.500	ug/L
Aroclor-1248	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.0933	0.500	ug/L
Aroclor-1254	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.103	0.500	ug/L
Aroclor-1260	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.0784	0.500	ug/L

VO+15 Volatile Organics - GC/MS

1,1,1-Trichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.216	1.00	ug/L
1,1,2,2-Tetrachloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.393	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.149	1.00	ug/L
1,2,4-Trichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.437	1.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS								
1,2-Dichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.210	1.00	ug/L
1,2-Dichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.267	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.238	1.00	ug/L
2-Chloroethylvinyl Ether	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.601	1.00	ug/L
Acrolein	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.606	2.00	ug/L
Benzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.129	1.00	ug/L
Bromodichloromethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.258	1.00	ug/L
Bromoform	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.372	1.00	ug/L
Chlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.300	1.00	ug/L
Chlorodibromomethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.504	1.00	ug/L
Chloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.299	2.00	ug/L
Chloroform	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.365	1.00	ug/L
Chloromethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.758	1.00	ug/L
cis-1,3-Dichloropropene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.294	1.00	ug/L
Ethylbenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.244	1.00	ug/L
Methylene Chloride	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.681	1.00	ug/L
Tetrachloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.466	1.00	ug/L
Toluene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.205	1.00	ug/L
trans-1,2-Dichloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.241	1.00	ug/L
trans-1,3-Dichloropropene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.279	1.00	ug/L
Trichloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.146	1.00	ug/L
Vinyl chloride	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.157	1.00	ug/L

FootNotes

RL - Reporting limit
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Form 1
WETCHEM

Client : Aqua Pro-Tech Laboratories
 Project Name : 1071059
 Lab ID : L2139419-01
 Client ID : 1071059-09
 Sample Location : 1071059
 Sample Matrix : WATER
 Analytical Method : 1,8315A
 Lab File ID : WG1527166,JT,bt
 Sample Amount :
 Digestion Method :

Lab Number : L2139419
 Project Number : 1071059
 Date Collected : 07/21/21 08:10
 Date Received : 07/22/21
 Date Analyzed : 07/23/21 20:03
 Dilution Factor : 1
 Analyst : JT
 Instrument ID : HPLC
 %Solids : N/A
 Date Digested : 07/23/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
50-00-0	Formaldehyde	ND	0.075	0.022	U



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.
Executive Director

May 24, 2021

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO

JUN - 3 2021

**DEPARTMENT OF
PUBLIC WORKS**

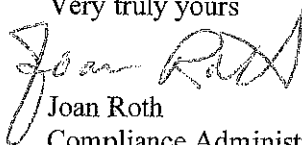
Re: Wastewater Analysis Report/s - 2021

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on April 14, 2021. 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 2022.

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 M. Dolphin, PE

File: Ramapo Landfill (P) - 2021
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: 04/14/2021 Sample ID: IS-210414-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.77	04/14/2021	BC	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	5	04/20/2021	BC	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	22	04/15/2021	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	3	04/15/2021	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.



May 19, 2021

Linda Hoffman
Laboratory Director
NYSDOH ID No. 10447

No. of pages in this report: 10

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962
CHAIN OF CUSTODY DOCUMENT
SEMI-ANNUAL
Permit No. 9 - Expired: 8/1/2025

RAMAPO LANDFILL, HILLBURN

FACILITY SAMPLED:

LOCATION SAMPLED: Manhole immediately upstream of wetwell near road
ID Format (CY - MM - DD)

SAMPLE ID NO. 15-210414 -RLF

pH CALIBRATION DATE: 1st 4/13/21 2nd 7/13/21 ANALYST: 1st DC 2nd DC
Buffer 4 Reading: 7.00 Buffer 7 Reading: 7.00 Slope: 47/104

*****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. OC _____
Time: _____ Done By: _____

*****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. OC _____

Time: _____ Done By: _____

SAMPLE INFORMATION

COMPOSITE	DATE	TIME	SAMPLER'S SIGNATURE	pH	TEMP. (°C)	TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME mL	BOD, COD, TSS (unpreserved)	METALS (HNO ₃)	CHLORIDES, TDS (unpreserved)	AMMONIA, TRN, Total Phosphate (H ₂ SO ₄)	TOTAL AVAILABLE CYANIDE (NaOH)	Formaldehyde (none)	PHENOL (H ₂ SO ₄)	Oil and Grease, TPH (HCl)	VOCs, EPA 824, (HCl)	SEMI-VOLATILES, EPA 825 (unpreserved)	PCBs & Pesticides (unpreserved)
START	4/13/21	9:23am	[Signature]	6.02	12.5	COMP.	PLASTIC	1	1000	X										
END	4/14/21	9:36am	[Signature]	6.77	10.0	COMP.	PLASTIC	1	250		X									
						COMP.	PLASTIC	1	250			X								
						COMP.	PLASTIC	1	500				X							
						GRAB	PLASTIC	1	500					X						
						GRAB	AMBER	1	1000						X					
						GRAB	AMBER	1	500							X				
						GRAB	AMBER	1	1000								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

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.

SAMPLES RELINQUISHED BY:

[Signature]

DATE:

4/14/21

SAMPLES RECEIVED BY:

[Signature]

DATE:

4/14/21

COMMENTS:

Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Ti, Zn

10:40am

10:40am



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-20 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	04/20/21 12:00	04/20/21 14:15	1.21			0.200	mg/L
Chloride	EPA 300.0	04/21/21 14:45	04/21/21 14:45	118			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	04/19/21 15:06	04/20/21 10:00	0.0590			0.0100	mg/L
Total Dissolved Solids	SM 2540 C-11	04/16/21 09:05	04/17/21 10:10	517			20.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	04/27/21 13:50	04/27/21 16:00	1.30			0.200	mg/L
Total Metals								
Antimony	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Arsenic	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00100	mg/L
Boron	EPA 200.7	04/15/21 14:00	04/26/21 17:06	0.105			0.0500	mg/L
Cadmium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Chromium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.0100	mg/L
Copper	EPA 200.8	04/15/21 14:00	04/23/21 15:00	0.0116			0.00200	mg/L
Lead	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Manganese	EPA 200.8	04/15/21 14:00	04/23/21 15:00	0.342			0.00200	mg/L
Mercury	EPA 245.1	04/15/21 08:20	04/15/21 12:33	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Nickel	EPA 200.8	04/15/21 14:00	04/23/21 15:00	0.00344			0.00200	mg/L
Selenium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00600	mg/L
Silver	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Thallium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Zinc	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.0300	mg/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
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J - Indicates estimated value.

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	04/15/21 09:21	04/15/21 15:23	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/ 4500CN-G	04/26/21 08:21	04/26/21 08:22	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	04/20/21 16:20	04/20/21 16:20	ND	U		5.00	mg/L
Oil & Grease (HEM-SGT)	EPA 1664A (SGT)	04/20/21 16:20	04/20/21 16:20	ND	U		5.00	mg/L
Phenols	EPA 420.1	04/19/21 10:46	04/19/21 17:46	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
1,2-Diphenylhydrazine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.180	2.00	ug/L
2,4,6-Trichlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.326	5.00	ug/L
2,4-Dinitrotoluene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.108	2.00	ug/L
2,6-Dinitrotoluene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.143	2.00	ug/L
2-Chloronaphthalene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.122	2.00	ug/L
2-Chlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
3-Chlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.162	2.00	ug/L
3,3'-Dichlorobenzidine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.110	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0793	2.00	ug/L
4-Bromophenyl-phenyl ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.191	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.141	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.136	2.00	ug/L
4-Nitrophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.140	2.00	ug/L
Anthracene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.121	2.00	ug/L
Benzidine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	7.86	10.0	ug/L
Benzo(a)anthracene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0652	2.00	ug/L
Benzo(k)fluoranthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0468	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.112	2.00	ug/L
bis(2-chloroethyl)ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.132	2.00	ug/L
bis(2-ethylhexyl)phthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.190	2.00	ug/L

FootNotes

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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
BNA+25 Semivolatile Organics - GC/MS								
Chrysene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.129	2.00	ug/L
Dibenzo(a,h)anthracene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0900	2.00	ug/L
Diethylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.139	2.00	ug/L
Fluoranthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.129	2.00	ug/L
Fluorene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0974	2.00	ug/L
Isophorone	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0607	2.00	ug/L
Nitrobenzene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.146	2.00	ug/L
Nitroso-dimethylamine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.107	2.00	ug/L
Nitroso-di-n-propylamine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.130	2.00	ug/L
n-Nitrosodiphenylamine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0626	2.00	ug/L
Pentachlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0725	2.00	ug/L
Phenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.115	2.00	ug/L

Pesticides

4,4'-DDD	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000378	0.0200	ug/L
4,4'-DDE	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000234	0.0200	ug/L
4,4'-DDT	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000319	0.0200	ug/L
Aldrin	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000527	0.0200	ug/L
alpha-BHC	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000255	0.0200	ug/L
beta-BHC	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000371	0.0200	ug/L
Chlordane	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000327	0.0500	ug/L
delta-BHC	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000320	0.0200	ug/L
Dieldrin	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000271	0.0200	ug/L
Endosulfan I	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000380	0.0200	ug/L
Endosulfan II	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000254	0.0200	ug/L
Endosulfan sulfate	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000138	0.0200	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Pesticides								
Endrin	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000229	0.0200	ug/L
Endrin aldehyde	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000318	0.0200	ug/L
gamma-BHC (Lindane)	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000241	0.0200	ug/L
Heptachlor	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000563	0.0200	ug/L
Heptachlor Epoxide	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000302	0.0200	ug/L
Methoxychlor	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000343	0.0200	ug/L
Toxaphene	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.0237	0.200	ug/L
PCBs								
Aroclor-1016	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.0497	0.500	ug/L
Aroclor-1221	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.352	0.500	ug/L
Aroclor-1232	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.109	0.500	ug/L
Aroclor-1242	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.185	0.500	ug/L
Aroclor-1248	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.0933	0.500	ug/L
Aroclor-1254	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.103	0.500	ug/L
Aroclor-1260	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.0784	0.500	ug/L
vO+15 Volatile Organics - GC/MS								
1,1,1-Trichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.216	1.00	ug/L
1,1,2,2-Tetrachloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.393	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.149	1.00	ug/L
1,2,4-Trichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.437	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.210	1.00	ug/L
1,2-Dichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.267	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.238	1.00	ug/L
2-Chloroethylvinyl Ether	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.601	1.00	ug/L
Acrolein	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.606	2.00	ug/L
Benzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.129	1.00	ug/L
Bromodichloromethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.258	1.00	ug/L
Bromoform	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.372	1.00	ug/L

FootNotes

RL - Reporting limit
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D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS								
Chlorobenzene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.300	1.00	ug/L
Chlorodibromomethane	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.504	1.00	ug/L
Chloroethane	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.299	2.00	ug/L
Chloroform	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.365	1.00	ug/L
Chloromethane	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.758	1.00	ug/L
cis-1,3-Dichloropropene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.294	1.00	ug/L
EthylBenzene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.244	1.00	ug/L
Methylene Chloride	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.681	1.00	ug/L
Tetrachloroethene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.466	1.00	ug/L
Toluene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.205	1.00	ug/L
trans-1,2-Dichloroethene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.241	1.00	ug/L
trans-1,3-Dichloropropene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.279	1.00	ug/L
Trichloroethene	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.146	1.00	ug/L
Vinyl chloride	EPA 824.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.157	1.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation

Form 1

WETCHEM

Client : Aqua Pro-Tech Laboratories
 Project Name : 1040662
 Lab ID : L2119040-03
 Client ID : 1040662-21
 Sample Location :
 Sample Matrix : WATER
 Analytical Method : 1,8315A
 Lab File ID : WG1486919,JT,txt
 Sample Amount :
 Digestion Method :

Lab Number : L2119040
 Project Number : 1040662
 Date Collected : 04/14/21 09:36
 Date Received : 04/14/21
 Date Analyzed : 04/19/21 22:07
 Dilution Factor : 1
 Analyst : JT
 Instrument ID : HPLC
 %Solids : N/A
 Date Digested : 04/16/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
50-00-0	Formaldehyde	ND	0.075	0.022	U

APL

CHAIN OF CUSTODY

Page 5 of 5

www.aquaprotechlabs.com

1275 Bloomfield Avenue Building 6
Fairfield, NJ 07004

TEL: 973-227-0422
FAX: 973-227-2813

Contamination Level

Low	
Medium	
High	

Client:	Rockland County Sewer District #1	Send Report To:	Linda Hoffman
Address:	4 Route 340	Address:	4 Route 340
Phone:	845-385-5626	Phone:	845-385-5626
E-Mail:	l.hoffman@rocklandnj.org	Send Invoice To:	Linda Hoffman
Project Name:	RC210414	Address:	4 Route 340 Orangeburg, NY 10962
Project Manager:	Linda Hoffman	Sampling Location:	Rockland
Project or PO #:	RC210414-RLF	Sampled By:	BC

Turn-around Time	APL Standard 2 Weeks
Rush (Choose One Below)	1 Day 2 Days 3 Days
Other (Specify Below)	

Date and Time Required: _____

**May Need Lab Approval

Report / Electronic Format	Results Only / NY ASP-A	Final Summary
	Reduced: NJ DEP	ECUP
	Full: NJ DEP / NY ASP-B	EmisData
	State format/12 Reporting	Hazmat EDD

PKSD # _____

Cooler Temp: 50

Comments/Special Instructions:

APL Order #	Sample #	Field ID	Matrix	Date	Time	Matrix Abbreviations:	Preserv active	No. of Bottles	Sample Type		Analysis Requested	CHLORIDES, TDS	TOTAL AND AVAILABLE CYANIDE	PHENOLS	OIL AND GREASE AND TPH	VOC	SEMI VOLATILES	PCB'S AND PESTICIDES	FORMALDEHYDE
20		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
1		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
4		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
7		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							
		IS-210414-RLF	WW	4/14/2021	13:47	Pool: Solid SP - 31mg SEA - 31mg SEA - 31mg	X	1	X	Grab		X							

RELINQUISHED BY:	Print: _____	Signature: _____	RECEIVED BY:	Print: _____	Signature: _____
RELINQUISHED BY:	Print: _____	Signature: _____	RECEIVED BY:	Print: _____	Signature: _____
RELINQUISHED BY:	Print: _____	Signature: _____	RECEIVED BY:	Print: _____	Signature: _____

Date: 4/14/2021 Time: 13:47

Date: 4/14/2021 Time: 13:47

Date: 4/14/2021 Time: 13:47

By signing this Chain of Custody Agreement, customer expressly agrees to pay APL for all charges, reasonably incurred in connection with analysis and reporting for these samples.

APL

APL Environmental Services
Customized Environmental Testing

4/15/21

SUBCONTRACT ORDER

62119040

SENDING LABORATORY:

Aqua Pro-Tech Laboratories
1275 Bloomfield Ave, Bldg 6
Fairfield, NJ 07004
Phone: (973) 227-0422
Fax: (973) 227-2183

Project Mgr: Matthew Cordova
Email: mcordova@aquaprotechlabs.com

Send Invoice to: AP@AquaProTechLabs.com

Send Report to: Reporting@AquaProTechLabs.com

RECEIVING LABORATORY:

Alpha Analytical- Mahwah Service Centre
35 Whitney Road, Suite 5
Mahwah, NJ 07430
Phone: (201) 847-9100
Fax:

Turn-Around Time

☒ 24 Hr	☐ 48 Hr	☐ 72 Hr	☐ 1 Week
Rush (Choose One Below)			

Report / Electronic Format

☒ Accidents Only	☐ NJ DEP Release	☐ NJ DEP Full	☐ State Form 62 Response
☐ Hazmat Release	☐ Hazard ETO	☐ T-001	☐ Other

Date: _____ Time: _____
**Order Outside Date/Time

PWSID # _____ SRP# _____

See May Need Lab Approval

APL Order ID: 1040662

Laboratory ID	APL Lab ID	Sampled	Sample Type	Matrix	Analysis Requested	[Comments]
1040662-08	1040662-08	04/14/2021 08:50	Composite	WW	Mercury - Sub	Containers Supplied Poly 500ml (A)
Sample Name/Location: PS-210414-EFF1						
Comments:						
1040662-09	1040662-09	04/14/2021 08:50	Composite	WW	Mercury - Sub	Containers Supplied Poly 500ml (A)
Sample Name/Location: PS-210414-EFF2						
Comments:						
1040662-21	1040662-21	04/14/2021 09:36	Grab	WW	Formaldehyde	Containers Supplied Subcontract Container (J)
Sample Name/Location: IS-210414-R1-F						
Comments:						

Released By: <u>Chapelle APL</u>	Date / Time: <u>4/14 1630</u>	Received By: <u>Walter Burg</u>	Date / Time: <u>4/14/21 18:30</u>
Released By: <u>Walter Burg</u>	Date / Time: <u>4/15 16:00</u>	Received By: <u>WAL - Arc</u>	Date / Time: <u>4/15/21 16:00</u>



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.
Executive Director

November 17, 2021

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO

NOV 30 2021

DEPARTMENT OF
PUBLIC WORKS

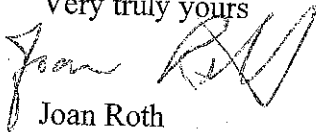
Re: Wastewater Analysis Report/s - 2021

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on October 20, 2021. 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 2022.

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

M. Dolphin, PE

File: Ramapo Landfill (P) - 2021
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340

Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

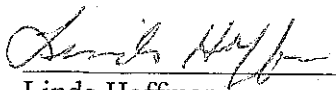
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 10/20/2021 Sample ID: IS-211020-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	7.33	10/20/2021	LH	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	4	10/26/2021	SH	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	36	10/21/2021	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	4	10/21/21	LH	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.



November 12, 2021

Linda Hoffman

Laboratory Director

NYSDOH ID No. 10447

No. of pages in this report: 10

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED: **RAMAPO LANDFILL, Hillburn**

(Permit No. 9 - Expired: 8/14/2025)

SEMI-ANNUAL

LOCATION SAMPLED: Manhole immediately upstream of wetwell near road
ID Format (YY - MM - DD)

SAMPLE ID NO. **IS-- 211020** --RLF

pH CALIBRATION DATE: 1st 10/19/21 2nd 10/20/21

Buffer 4 Reading: 7.01 Buffer 7 Reading: 7.01

TIME: 1st 7:05A 2nd

Buffer 10 Reading: 10.04

ANALYST: 1st **LS** 2nd

Slope: 9.7

*****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. OC

Done By:

SAMPLE INFORMATION

COMPOSITE	DATE	TIME	SAMPLER'S SIGNATURE	pH	TEMP. (°C)	TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME ml	BOB, COP, TSS (unpreserved)	METALS (HNO ₃) (unpreserved)	CHLORIDES, TDS (unpreserved)	AMMONIA, TKN, Total Phosphate (H ₂ SO ₄)	TOTAL AVAILABLE CYANIDE (NaOH)	Formaldehyde (none)	PHENOL (H ₂ SO ₄)	Oil and Grease, TPH (BCI)	VOCs, EPA 624, (BCI)	SEMI-VOLATILES, EPA 625 (unpreserved)	PCBs & Pesticides (unpreserved)
START	10/19/21	8:35A	<i>[Signature]</i>	7.48	13.5	COMP.	PLASTIC	1	1000	X										
END	10/20/21	10:25A	<i>[Signature]</i>	7.33	17.8	COMP.	PLASTIC	1	250		X									
						COMP.	PLASTIC	1	250			X								
						COMP.	PLASTIC	1	500				X							
						GRAB	PLASTIC	1	500					X						
						GRAB	AMBER	1	1000											
						GRAB	AMBER	1	500						X					
						GRAB	AMBER	1	1000							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.

SAMPLES RELINQUISHED BY: *[Signature]* DATE: 10/20/21

SAMPLES RECEIVED BY: *[Signature]* DATE: 10/20/21

COMMENTS: Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, Zn



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1101034-35 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	10/23/21 10:47	10/23/21 13:58	1.33			0.200	mg/L
Chloride	EPA 300.0	10/21/21 19:54	10/21/21 19:54	160			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	11/02/21 18:00	11/03/21 10:00	0.0760			0.0200	mg/L
Total Dissolved Solids	SM 2540 C-11	10/26/21 10:17	10/27/21 13:35	552			20.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	10/22/21 10:00	10/22/21 15:00	1.36			0.200	mg/L
Total Metals								
Antimony	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00600	mg/L
Arsenic	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00100	mg/L
Boron	EPA 200.7	11/03/21 09:56	11/04/21 12:09	0.140			0.0500	mg/L
Cadmium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Chromium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.0100	mg/L
Copper	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.00745			0.00200	mg/L
Cadm	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Manganese	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.434			0.00200	mg/L
Mercury	EPA 245.1	11/04/21 12:32	11/04/21 15:08	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Nickel	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.00284			0.00200	mg/L
Selenium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00600	mg/L
Silver	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Thallium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Zinc	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.0346			0.0300	mg/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns
H - Indicates a Hold Time violation
D1 - Sample was Decanted (Dissolved)

Project Name: 1101034

Project Number: 1101034

Lab Number: L2158864

Report Date: 11/10/21

SAMPLE RESULTS

Lab ID: L2158864-01

Client ID: 1101034-36

Sample Location: Not Specified

Date Collected: 10/20/21 10:29

Date Received: 10/27/21

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Formaldehyde by EPA 8315A - Westborough Lab										
Formaldehyde	ND		mg/l	0.075	0.022	1	10/29/21 06:15	10/29/21 10:56	1,8315A	JT

APL

www.aquaprotechlabs.com
1275 Bloomfield Avenue Building 5
Fairfield, NJ 07004
TEL: 973-227-0422
FAX: 973-227-2813

CHAIN OF CUSTODY

Page 8 of 10

Client:	Rockland County Sewer District #1	Send Report To:	Linda Hoffman
Address:	4 Route 340	Address:	4 Route 340
	Orangeburg, NY 10962		Orangeburg, NY 10962
Phone:	845-365-5626	Phone:	845-365-5626
E-Mail:	l.hoffman@rocklandcountynj.gov	Send Invoice To:	Linda Hoffman
Project Name:	RC211020	Address:	4 Route 340 Orangeburg, NY 10962
Project Manager:	Linda Hoffman	Sampling Location:	Rockland
Project or PO #:	RC211020	Sampled By:	LH

Contamination Level

Low	Medium	High

Turn Around Time

X	API Standard 2 Weeks
	Rush (Charge One Below)
	1 Day
	2 Days
	3 Days
	Other (Specify Below)

Date and Time Received: _____

Report / Electronic format

X	Results Only / NY ASP-A
	Reduced: NJ DEP
	Full: NJ DEP / NY ASP-B
	State Form 612 Reporting

Excel Summary

	Excel
	Spreadsheet
	Hardcopy

Comments/Special Instructions:

APL Order #	Sample #	Field ID	Date	Time	Matrix	Grab	Composite	No. of Bottles	Pressure	Active	Metals (As, Ba, Cd, Cr, Cu, Pb, Hg, Mn, Mo, Ni, Sb, Se, Ag, Ti, Zn)	Ammonia, TNK, Total	Chlorides, TDS	Cyanide	Phenols	Oil and Grease and TPH	VOC	Semi Volatiles	PCBs and Pesticides	Formaldehyde
1107034	35	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	36	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	37	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	38	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	39	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	40	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	41	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	42	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	43	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	44	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	45	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	46	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	47	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	48	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	49	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	50	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	51	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	52	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	53	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	54	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	55	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	56	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	57	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	58	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	59	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	60	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	61	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	62	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	63	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	64	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	65	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	66	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	67	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	68	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	69	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	70	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	71	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	72	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	73	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	74	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	75	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	76	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	77	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	78	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	79	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	80	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	81	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	82	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	83	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	84	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	85	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	86	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	87	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	88	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	89	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	90	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	91	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	92	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	93	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	94	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	95	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	96	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	97	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	98	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	99	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									
	100	IS-211020-RLF	10/20/2021	10:20:00 AM	WW		X	1			X									

RELINQUISHED BY:	Print: Linda Hoffman	Signature: [Signature]	RECEIVED BY:	Print: [Signature]	Signature: [Signature]	Date: 10/20/21
RELINQUISHED BY:	Print: [Signature]	Signature: [Signature]	RECEIVED BY:	Print: [Signature]	Signature: [Signature]	Date: 10/20/21
RELINQUISHED BY:	Print: [Signature]	Signature: [Signature]	RECEIVED BY:	Print: [Signature]	Signature: [Signature]	Date: 10/20/21

CERTIFICATIONS: NELAP National Environmental Accreditation Program, NELAP #55-02903, NYDOH #14334
By signing this Chain of Custody Agreement, customer expressly agrees to pay APL for all charges, reasonably incurred in connection with analysis and reporting for these samples.

SUBCONTRACT ORDER

10/27/21 12158864

SENDING LABORATORY:

Aqua Pro-Tech Laboratories
1275 Bloomfield Ave, Bldg 6
Fairfield, NJ 07004
Phone: (973) 227-0422
Fax: (973) 227-2183

Project Mgr: Matthew Cordova
Email: mcordova@aquaprotechlabs.cc
Send Invoice to: AP@AquaProTechLabs.com
Send Report to: Reporting@AquaProTechLabs.com

RECEIVING LABORATORY:

Alpha Analytical- Mahwah Service Center
35 Whitney Road, Suite 5
Mahwah, NJ 07430
Phone: (201) 847-9100
Fax:

Turn-Around Time	
☒ APL Standard 2 Weeks	
Rush (Choose One Below)	
24 Hr.	72 Hr.
48 Hr.	1 Week
Other (provide Date/Time)	

Date _____ Time _____
May Need Lab Approval

Report / Electronic Format

☒ Results Only	☐ Email Delivery
☐ NJ DEP Reduced	☐ Massive EDD
☐ NJ DEP Full	☐ EDD
State Forms/ED Reporting	

PWSID # _____ SPP# _____

APL Order ID: 1101034

Laboratory ID	APL Lab ID	Sampled	Sample Type	Matrix	Analysis Requested	Comments
1101034-36	10/20/2021 10:29	Grab	WW	Formaldehyde		
Sample Name/Location: IS-211020-RLF						
Containers Supplied: Subcontract Container (1)						

Released By: <i>Chapce APL</i>	Date/Time: 10/27/21 1510	Received By: <i>Paul Maggella</i>	Date/Time: 10/27/21 1510
Released By: <i>Paul Maggella</i>	Date/Time: 10/27/21 1615	Received By: <i>Paul Maggella</i>	Date/Time: 10/27/21 1645
Page 15 of 15	10/27/21	10/27/21	10/27/21 1645



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1101034-36 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	11/02/21 12:07	11/02/21 16:28	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/ 4500CN-G	11/02/21 12:07	11/02/21 14:42	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	11/01/21 12:00	11/01/21 12:00	ND	U		5.00	mg/L
Oil & Grease (HEM-SGT)	EPA 1664A (SGT)	11/01/21 12:00	11/01/21 12:00	ND	U		5.00	mg/L
Phenols	EPA 420.1	10/29/21 10:00	10/29/21 17:00	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
1,2-Diphenylhydrazine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.180	2.00	ug/L
2,4,6-Trichlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.326	5.00	ug/L
2,4-Dinitrotoluene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.108	2.00	ug/L
2,6-Dinitrotoluene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.143	2.00	ug/L
1-chloronaphthalene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.122	2.00	ug/L
2-Chlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
2-Nitrophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.162	2.00	ug/L
3,3'-Dichlorobenzidine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.110	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0793	2.00	ug/L
4-Bromophenyl-phenyl ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.191	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.141	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.136	2.00	ug/L
4-Nitrophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.140	2.00	ug/L
Anthracene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.121	2.00	ug/L
Benzidine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	7.86	10.0	ug/L
Benzo(a)anthracene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0652	2.00	ug/L
Benzo(k)fluoranthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0468	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.112	2.00	ug/L
bis(2-chloroethyl)ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.132	2.00	ug/L
bis(2-ethylhexyl)phthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.190	2.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation
D1 - Sample was Decanted (Dissolved)



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1101034-36 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
BNA+25 Semivolatile Organics - GC/MS								
Chrysene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.129	2.00	ug/L
Dibenzo(a,h)anthracene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0900	2.00	ug/L
Diethylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	1.41	J	0.139	2.00	ug/L
Fluoranthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.129	2.00	ug/L
Fluorene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0974	2.00	ug/L
Isophorone	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0607	2.00	ug/L
robenzene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.146	2.00	ug/L
n-Nitroso-dimethylamine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.107	2.00	ug/L
n-Nitroso-di-n-propylamine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.130	2.00	ug/L
n-Nitrosodiphenylamine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0626	2.00	ug/L
Pentachlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0725	2.00	ug/L
Phenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.115	2.00	ug/L

BNA+25 Semivolatile Organics - GC/MS TIC

Ethanol, -butoxy-isomer	EPA 625.1	10/25/21 18:35	10/27/21 03:05	6.60	J, B			ug/L
unknown	EPA 625.1	10/25/21 18:35	10/27/21 03:05	5.18	J			ug/L

TIC Total: 11.8

Pesticides

4,4'-DDD	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000390	0.0206	ug/L
4,4'-DDE	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000241	0.0206	ug/L
4,4'-DDT	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000329	0.0206	ug/L
Aldrin	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000543	0.0206	ug/L
alpha-BHC	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000263	0.0206	ug/L
beta-BHC	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000382	0.0206	ug/L
Chlordane	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000337	0.0515	ug/L
delta-BHC	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000330	0.0206	ug/L

FootNotes

RL - Reporting limit
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P - Greater than 25% diff. between 2 GC columns
H - Indicates a Hold Time violation
D1 - Sample was Decanted (Dissolved)



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1101034-36 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Pesticides								
Dieldrin	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000279	0.0206	ug/L
Endosulfan I	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000392	0.0206	ug/L
Endosulfan II	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000262	0.0206	ug/L
Endosulfan sulfate	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000142	0.0206	ug/L
Endrin	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000236	0.0206	ug/L
Endrin aldehyde	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000328	0.0206	ug/L
gamma-BHC (Lindane)	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000248	0.0206	ug/L
Heptachlor	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000580	0.0206	ug/L
Heptachlor Epoxide	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000311	0.0206	ug/L
Methoxychlor	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000354	0.0206	ug/L
Toxaphene	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.0244	0.206	ug/L
PCBs								
Aroclor-1016	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.0513	0.515	ug/L
Aroclor-1221	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.363	0.515	ug/L
Aroclor-1232	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.113	0.515	ug/L
Aroclor-1242	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.191	0.515	ug/L
Aroclor-1248	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.0962	0.515	ug/L
Aroclor-1254	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.106	0.515	ug/L
Aroclor-1260	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.0808	0.515	ug/L
VO+15 Volatile Organics - GC/MS								
1,1,1-Trichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.216	1.00	ug/L
1,1,2,2-Tetrachloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.393	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.149	1.00	ug/L
1,2,4-Trichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.437	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.210	1.00	ug/L
1,2-Dichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.267	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.238	1.00	ug/L
2-Chloroethylvinyl Ether	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.601	1.00	ug/L
Acrolein	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.606	2.00	ug/L
Benzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.129	1.00	ug/L

FootNotes

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All projects

1101034-36 (Wastewater)

IS-211020-RLF

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10/20/2021 10:29

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10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS								
Bromodichloromethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.258	1.00	ug/L
Bromoform	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.372	1.00	ug/L
Chlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.300	1.00	ug/L
Chlorodibromomethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.504	1.00	ug/L
Chloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.299	2.00	ug/L
Chloroform	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.365	1.00	ug/L
Chloromethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.758	1.00	ug/L
cis-1,3-Dichloropropene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.294	1.00	ug/L
EthylBenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.244	1.00	ug/L
Methylene Chloride	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.681	1.00	ug/L
Tetrachloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.466	1.00	ug/L
Toluene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.205	1.00	ug/L
trans-1,2-Dichloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.241	1.00	ug/L
trans-1,3-Dichloropropene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.279	1.00	ug/L
Trichloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.146	1.00	ug/L
Vinyl chloride	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.157	1.00	ug/L

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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.
Executive Director

November 17, 2021

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO

NOV 30 2021

DEPARTMENT OF PUBLIC WORKS

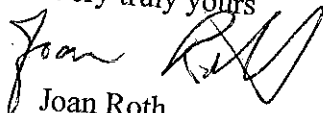
Re: Wastewater Analysis Report/s - 2021

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on October 20, 2021. 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 2022.

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

M. Dolphin, PE

File: Ramapo Landfill (P) - 2021
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340

Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

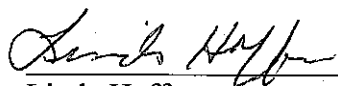
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 10/20/2021 Sample ID: IS-211020-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	7.33	10/20/2021	LH	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	4	10/26/2021	SH	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	36	10/21/2021	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	4	10/21/21	LH	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.



November 12, 2021

Linda Hoffman

Laboratory Director

NYSDOH ID No. 10447

No. of pages in this report: **10**



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1101034-35 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	10/23/21 10:47	10/23/21 13:58	1.33			0.200	mg/L
Chloride	EPA 300.0	10/21/21 19:54	10/21/21 19:54	160			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	11/02/21 18:00	11/03/21 10:00	0.0760			0.0200	mg/L
Total Dissolved Solids	SM 2540 C-11	10/26/21 10:17	10/27/21 13:35	552			20.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	10/22/21 10:00	10/22/21 15:00	1.36			0.200	mg/L
Total Metals								
Antimony	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00600	mg/L
Arsenic	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00100	mg/L
Boron	EPA 200.7	11/03/21 09:56	11/04/21 12:09	0.140			0.0500	mg/L
Cadmium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Chromium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.0100	mg/L
Copper	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.00745			0.00200	mg/L
Cobalt	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Manganese	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.434			0.00200	mg/L
Mercury	EPA 245.1	11/04/21 12:32	11/04/21 15:08	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Nickel	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.00284			0.00200	mg/L
Selenium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00600	mg/L
Silver	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Thallium	EPA 200.8	11/03/21 09:51	11/04/21 18:31	ND	U		0.00200	mg/L
Zinc	EPA 200.8	11/03/21 09:51	11/04/21 18:31	0.0346			0.0300	mg/L

FootNotes

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Analytical Results Summary

All projects

1101034-36 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	11/02/21 12:07	11/02/21 16:28	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/ 4500CN-G	11/02/21 12:07	11/02/21 14:42	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	11/01/21 12:00	11/01/21 12:00	ND	U		5.00	mg/L
Oil & Grease (HEM-SGT)	EPA 1664A (SGT)	11/01/21 12:00	11/01/21 12:00	ND	U		5.00	mg/L
Phenols	EPA 420.1	10/29/21 10:00	10/29/21 17:00	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
1,2-Diphenylhydrazine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.180	2.00	ug/L
2,4,6-Trichlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.326	5.00	ug/L
2,4-Dinitrotoluene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.108	2.00	ug/L
2,6-Dinitrotoluene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.143	2.00	ug/L
2-Chloronaphthalene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.122	2.00	ug/L
2-Chlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
2-Nitrophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.162	2.00	ug/L
3,3'-Dichlorobenzidine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.110	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0793	2.00	ug/L
4-Bromophenyl-phenyl ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.191	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.141	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.136	2.00	ug/L
4-Nitrophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.140	2.00	ug/L
Anthracene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.121	2.00	ug/L
Benzidine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	7.86	10.0	ug/L
Benzo(a)anthracene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0652	2.00	ug/L
Benzo(k)fluoranthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0468	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.112	2.00	ug/L
bis(2-chloroethyl)ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.132	2.00	ug/L
bis(2-ethylhexyl)phthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.190	2.00	ug/L

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BNA+25 Semivolatile Organics - GC/MS								
Chrysene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.129	2.00	ug/L
Dibenzo(a,h)anthracene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0900	2.00	ug/L
Diethylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 625.1	10/25/21 18:35	10/27/21 03:05	1.41	J	0.139	2.00	ug/L
Fluoranthene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.129	2.00	ug/L
Fluorene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0974	2.00	ug/L
Isophorone	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0607	2.00	ug/L
robenzene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.146	2.00	ug/L
n-Nitroso-dimethylamine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.107	2.00	ug/L
n-Nitroso-di-n-propylamine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.130	2.00	ug/L
n-Nitrosodiphenylamine	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0626	2.00	ug/L
Pentachlorophenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0725	2.00	ug/L
Phenol	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 625.1	10/25/21 18:35	10/27/21 03:05	ND	U	0.115	2.00	ug/L

BNA+25 Semivolatile Organics - GC/MS TIC

Ethanol, -butoxy-isomer	EPA 625.1	10/25/21 18:35	10/27/21 03:05	6.60	J, B			ug/L
unknown	EPA 625.1	10/25/21 18:35	10/27/21 03:05	5.18	J			ug/L

TIC Total: 11.8

Pesticides

4,4'-DDD	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000390	0.0206	ug/L
4,4'-DDE	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000241	0.0206	ug/L
4,4'-DDT	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000329	0.0206	ug/L
Aldrin	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000543	0.0206	ug/L
alpha-BHC	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000263	0.0206	ug/L
beta-BHC	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000382	0.0206	ug/L
Chlordane	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000337	0.0515	ug/L
delta-BHC	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000330	0.0206	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation
D1 - Sample was Decanted (Dissolved)

Analytical Results Summary

All projects
1101034-36 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Pesticides								
Dieldrin	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000279	0.0206	ug/L
Endosulfan I	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000392	0.0206	ug/L
Endosulfan II	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000262	0.0206	ug/L
Endosulfan sulfate	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000142	0.0206	ug/L
Endrin	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000236	0.0206	ug/L
Endrin aldehyde	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000328	0.0206	ug/L
gamma-BHC (Lindane)	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000248	0.0206	ug/L
Heptachlor	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000580	0.0206	ug/L
Heptachlor Epoxide	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000311	0.0206	ug/L
Methoxychlor	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.000354	0.0206	ug/L
Toxaphene	EPA 608.3	10/25/21 12:30	10/27/21 22:31	ND	U	0.0244	0.206	ug/L
PCBs								
Aroclor-1016	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.0513	0.515	ug/L
Aroclor-1221	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.363	0.515	ug/L
Aroclor-1232	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.113	0.515	ug/L
Aroclor-1242	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.191	0.515	ug/L
Aroclor-1248	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.0982	0.515	ug/L
Aroclor-1254	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.106	0.515	ug/L
Aroclor-1260	EPA 608.3	10/25/21 12:31	10/26/21 10:52	ND	U	0.0808	0.515	ug/L
VO+15 Volatile Organics - GC/MS								
1,1,1-Trichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.216	1.00	ug/L
1,1,2,2-Tetrachloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.393	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.149	1.00	ug/L
1,2,4-Trichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.437	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.210	1.00	ug/L
1,2-Dichloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.267	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.238	1.00	ug/L
2-Chloroethylvinyl Ether	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.601	1.00	ug/L
Acrolein	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.606	2.00	ug/L
Benzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.129	1.00	ug/L

FootNotes

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P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation
D1 - Sample was Decanted (Dissolved)



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects

1101034-36 (Wastewater)

IS-211020-RLF

Collected
10/20/2021 10:29

Received
10/20/2021 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS								
Bromodichloromethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.258	1.00	ug/L
Bromoform	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.372	1.00	ug/L
Chlorobenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.300	1.00	ug/L
Chlorodibromomethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.504	1.00	ug/L
Chloroethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.299	2.00	ug/L
Chloroform	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.365	1.00	ug/L
Chloromethane	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.758	1.00	ug/L
cis-1,3-Dichloropropene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.294	1.00	ug/L
EthylBenzene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.244	1.00	ug/L
Methylene Chloride	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.681	1.00	ug/L
Tetrachloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.466	1.00	ug/L
Toluene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.205	1.00	ug/L
trans-1,2-Dichloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.241	1.00	ug/L
trans-1,3-Dichloropropene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.279	1.00	ug/L
Trichloroethene	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.146	1.00	ug/L
Vinyl chloride	EPA 624.1	10/26/21 21:34	10/26/21 21:34	ND	U	0.157	1.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
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B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation
D1 - Sample was Decanted (Dissolved)

Project Name: 1101034

Lab Number: L2158864

Project Number: 1101034

Report Date: 11/10/21

SAMPLE RESULTS

Lab ID: L2158864-01

Date Collected: 10/20/21 10:29

Client ID: 1101034-36

Date Received: 10/27/21

Sample Location: Not Specified

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Formaldehyde by EPA 8315A - Westborough Lab										
Formaldehyde	ND		mg/l	0.075	0.022	1	10/29/21 06:15	10/29/21 10:56	1,8315A	JT

APL

AQUA PRO-TECH LABORATORIES

www.aquaprotechlabs.com

1275 Bloomfield Avenue Building 6
Fairfield, NJ 07004

TEL: 973-227-0422

FAX: 973-227-2813

CHAIN OF CUSTODY

Page 8 of 10

Client:	Rockland County Sewer District #1	Send Report To:	Linda Hoffman
Address:	4 Route 340	Address:	4 Route 340
	Orangeburg, NY 10962		Orangeburg, NY 10962
Phone:	845-355-5626	Phone:	845-355-5626
E-Mail:	l.hoffman@rocklandny.us	Send Invoice To:	Linda Hoffman
Project Name:	RC211020	Address:	4 Route 340 Orangeburg, NY 10962
Project Manager:	Linda Hoffman	Sampling Location:	Rockland
Project or PO #:	RC211020	Sampled By:	LH

Contamination Level
Low
Medium
High

Comments/Special Instructions:

Cooler Temp: 4

Preservative

active

No. of Bottles

Sample Type

Matrix

Grab

Comp

Date

Time

Field ID

Sample #

APL Order #

APL Vial

Sample

Field ID

Sample #

APL Order #

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ANALYTICAL LABORATORIES
Certified Environmental Testing

SUBCONTRACT ORDER

10/27/21 12158864

SENDING LABORATORY:

Aqua Pro-Tech Laboratories
1275 Bloomfield Ave, Bldg 6
Fairfield, NJ 07004
Phone: (973) 227-0422
Fax: (973) 227-2183

Project Mgr: Matthew Cordova
Email: mcordova@aquaprotechlabs.cc
Send Invoice to: AP@AquaProTechLabs.com
Send Report to: Reporting@AquaProTechLabs.com

RECEIVING LABORATORY:

Alpha Analytical- Mahwah Service Centre
35 Whitney Road, Suite 5
Mahwah, NJ 07430
Phone: (201) 847-9100
Fax:

Turn-Around Time	
☒ APL Standard 2 Weeks	
Rush (Choose One Below)	
24 Hr.	☐
48 Hr.	☐
72 Hr.	☐
1 Week	☐
** Other (provide Date/Time)	
Date	Time
** May Need Lab Approval	

Report / Electronic Format	
☒ Results Only	
☐ NJ DEP Reduced	
☐ NJ DEP Full	
☐ State Forms/E2 Reporting	
☐ Email Delivery	
☐ Hardcopy EDD	
☐ EDD 1	

SRP#

PWSID #

APL Order ID: 1101034

Laboratory ID	APL Lab ID	Sampled	SampleType	Matrix	Analysis Requested	[Comments]
1101034-36	10/20/2021 10:29	Grab	WW	Formaldehyde		

Sample Name/Location: IS-211020-RLF

Comments:

Containers Supplied: Subcontract Container (J)

Released By

Date / Time 10/27/21 1510

Received By

Date / Time 10/27/21 1510

Released By

Date / Time 10/27/21 1615

Received By

Date / Time 10/27/21 1645

Page 15 of 15

Page 1 of 1



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.
Executive Director

May 24, 2021

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO

AUG 25 2021

DEPARTMENT OF PUBLIC WORKS

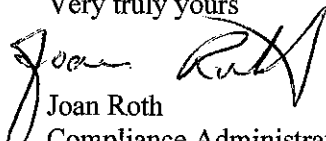
Re: Wastewater Analysis Report/s - 2021

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on July 21, 2021. 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 2022.

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 M. Dolphin, PE

File: Ramapo Landfill (P) - 2021
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340

Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

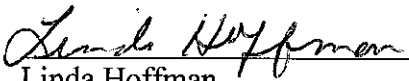
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 07/21/2021 Sample ID: IS-210721-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.54	07/21/2021	BC	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	6	07/27/2021	BC	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	21	07/22/2021	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	2	07/22/21	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.

 August 13, 2021
Linda Hoffman
Laboratory Director
NYSDOH ID No. 10447

No. of pages in this report: 8

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED: RAMAPO LANDFILL, Hillburn

(Permit No. 9 - Expired 8/14/2025)

SEMI-ANNUAL

LOCATION SAMPLED: Manhole immediately upstream of wetwell near road
ID Permit (YY - MM - DD)

SAMPLE ID NO. 15-21072.1 -RLF

pH CALIBRATION DATE: 1st 7/20/24 2nd 7/24/24 ANALYST: 1st LA 2nd DC
Buffer 4 Reading: 4.01/14.90 Buffer 7 Reading: 7.00/7.00 Buffer 10 Reading: 10.01/16.80 Spec: 98/198 pH 7 7.05/7.05

*****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)	TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME NEEDED mL	BOD, COD, TSS (unpreserved)	METALS (unpreserved)	CHLORIDES, TDS (unpreserved)	AMMONIA, TNK, Total Phosphate (H3PO4)	TOTAL AVAILABLE CYANIDE (NaOH)	Formaldehyde (form)	PHENOL (H2SO4)	Oil and Grease, TPH (HCl)	VOCs, EPA 624, (HCl)	SEMI-VOLATILES, EPA 625 (unpreserved)	PCBs & Pesticides (unpreserved)
START	7/20/24	10:20 AM	Bill Corn	6.67	20.9	COMP.	PLASTIC	1	1000	X										
END	7/24/24	8:10 AM	Cy Mullen	6.84	16.9	COMP.	PLASTIC	1	250		X									
						COMP.	PLASTIC	1	250			X								
						COMP.	PLASTIC	1	500				X							
						GRAB	PLASTIC	1	500					X						
						GRAB	AMBER	1	1000							X				
						GRAB	AMBER	1	500											
						GRAB	AMBER	1	1000											
						GRAB	Glass Vial	2	40											
						GRAB	Glass Amber	2	1000											
						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: Bill Corn DATE: 7/21/24 12:30 PM
SAMPLES RECEIVED BY: [Signature] DATE: 7/24/24 12:50 PM

COMMENTS: Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Ti, Zn



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1071059-08 (Wastewater)

IS-210721-RLF Comp

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	07/26/21 10:58	07/26/21 13:45	0.706			0.200	mg/L
Chloride	EPA 300.0	07/22/21 08:07	07/22/21 08:07	165			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	07/26/21 17:05	07/27/21 11:00	0.0200			0.0100	mg/L
Total Dissolved Solids	SM 2540 C-11	07/28/21 10:00	07/28/21 14:15	530			20.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	07/26/21 10:55	07/26/21 12:49	0.828			0.200	mg/L
Total Metals								
Antimony	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Arsenic	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00100	mg/L
Boron	EPA 200.7	07/27/21 09:04	08/04/21 15:55	0.126			0.0500	mg/L
Cadmium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Chromium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.0100	mg/L
Copper	EPA 200.8	07/22/21 19:00	08/02/21 19:46	0.0972			0.00200	mg/L
Cobalt	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Manganese	EPA 200.8	07/22/21 19:00	08/02/21 19:46	0.00204			0.00200	mg/L
Mercury	EPA 245.1	08/02/21 12:00	08/02/21 14:25	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Nickel	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Selenium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00600	mg/L
Silver	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Thallium	EPA 200.8	07/22/21 19:00	08/02/21 19:46	ND	U		0.00200	mg/L
Zinc	EPA 200.8	07/22/21 19:00	08/02/21 19:46	0.334			0.0300	mg/L

FootNotes

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E - Concentration exceeds highest calibration standard
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Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	08/03/21 09:42	08/03/21 17:44	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/ 4500CN-G	08/03/21 11:34	08/03/21 11:34	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	07/27/21 16:00	07/27/21 16:00	ND	U		5.00	mg/L
Oil & Grease (HEM-SGT)	EPA 1664A (SGT)	07/27/21 16:00	07/27/21 16:00	ND	U		5.00	mg/L
Phenols	EPA 420.1	07/29/21 12:00	07/29/21 18:00	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
2,3,4,6-Tetrachlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.210	2.00	ug/L
2,4,5-Trichlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0438	2.00	ug/L
2,4,6-Trichlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.326	5.00	ug/L
2,4-Dinitrotoluene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.108	2.00	ug/L
2,6-Dinitrotoluene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.143	2.00	ug/L
2-Chloronaphthalene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.122	2.00	ug/L
2-Chlorophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
2-Methylnaphthalene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.103	3.00	ug/L
2-Methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.155	2.00	ug/L
2-Nitroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.101	2.00	ug/L
2-Nitrophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.162	2.00	ug/L
3,3'-Dichlorobenzidine	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.110	2.00	ug/L
3+4-Methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.122	2.00	ug/L
3-Nitroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.134	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0793	2.00	ug/L
4-Bromophenyl-phenyl ether	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.191	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.141	2.00	ug/L
4-Chloroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.162	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.136	2.00	ug/L
4-Nitroaniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0868	2.00	ug/L
4-Nitrophenol	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.140	2.00	ug/L
Acetophenone	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.170	2.00	ug/L
Aniline	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.155	2.00	ug/L
Anthracene	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.121	2.00	ug/L
Atrazine	EPA 625.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0861	2.00	ug/L

FootNotes

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Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
BNA+25 Semivolatile Organics - GC/MS								
Benzaldehyde	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.134	2.00	ug/L
Benzo(a)anthracene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0852	2.00	ug/L
Benzo(k)fluoranthene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0468	2.00	ug/L
Biphenyl	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.106	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.112	2.00	ug/L
bis(2-chloroethyl)ether	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.132	2.00	ug/L
bis(2-ethylhexyl)phthalate	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.180	2.00	ug/L
Caprolactam	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.193	2.00	ug/L
Carbazole	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.188	2.00	ug/L
Chrysene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.128	2.00	ug/L
Benzo(a,h)anthracene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0900	2.00	ug/L
Dibenzofuran	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.120	2.00	ug/L
Diethylphthalate	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 825.1	07/23/21 10:09	07/28/21 07:59	3.71		0.139	2.00	ug/L
Fluoranthene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.129	2.00	ug/L
Fluorene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0974	2.00	ug/L
Isophorane	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0807	2.00	ug/L
Nitrobenzene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.146	2.00	ug/L
n-Nitroso-di-n-propylamine	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.130	2.00	ug/L
n-Nitrosodiphenylamine	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0826	2.00	ug/L
Pentachlorophenol	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0725	2.00	ug/L
Phenol	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 825.1	07/23/21 10:09	07/28/21 07:59	ND	U	0.115	2.00	ug/L

FootNotes

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D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units

Pesticides

4,4'-DDD	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000378	0.0200	ug/L
4,4'-DDE	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000234	0.0200	ug/L
4,4'-DDT	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000319	0.0200	ug/L
Aldrin	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000527	0.0200	ug/L
alpha-BHC	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000255	0.0200	ug/L
beta-BHC	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000371	0.0200	ug/L
Chlordane	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000327	0.0500	ug/L
delta-BHC	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000320	0.0200	ug/L
Dieldrin	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000271	0.0200	ug/L
Endosulfan I	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000380	0.0200	ug/L
Endosulfan II	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000254	0.0200	ug/L
Endosulfan sulfate	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000138	0.0200	ug/L
Endrin	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000229	0.0200	ug/L
Endrin aldehyde	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000318	0.0200	ug/L
gamma-BHC (Lindane)	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000241	0.0200	ug/L
Heptachlor	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000563	0.0200	ug/L
Heptachlor Epoxide	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000302	0.0200	ug/L
Methoxychlor	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.000343	0.0200	ug/L
Toxaphene	EPA 808.3	07/21/21 17:25	08/02/21 20:33	ND	U	0.0237	0.200	ug/L

PCBs

Aroclor-1016	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.0497	0.500	ug/L
Aroclor-1221	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.352	0.500	ug/L
Aroclor-1232	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.109	0.500	ug/L
Aroclor-1242	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.185	0.500	ug/L
Aroclor-1248	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.0893	0.500	ug/L
Aroclor-1254	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.103	0.500	ug/L
Aroclor-1260	EPA 808.3	07/21/21 17:22	07/23/21 15:36	ND	U	0.0784	0.500	ug/L

VO+15 Volatile Organics - GC/MS

1,1,1-Trichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.216	1.00	ug/L
1,1,2,2-Tetrachloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.393	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.149	1.00	ug/L
1,2,4-Trichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.437	1.00	ug/L

FootNotes

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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1071059-09 (Wastewater)

IS-210721-RLF Grab

Collected
07/21/2021 08:10

Received
07/21/2021 15:10

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS								
1,2-Dichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.210	1.00	ug/L
1,2-Dichloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.267	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.238	1.00	ug/L
2-Chloroethylvinyl Ether	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.601	1.00	ug/L
Acrolein	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.606	2.00	ug/L
Benzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.129	1.00	ug/L
Bromodichloromethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.258	1.00	ug/L
Bromoform	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.372	1.00	ug/L
Chlorobenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.300	1.00	ug/L
Chlorodibromomethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.504	1.00	ug/L
Chloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.299	2.00	ug/L
Chloroform	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.365	1.00	ug/L
Chloromethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.758	1.00	ug/L
cis-1,3-Dichloropropene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.294	1.00	ug/L
Ethylbenzene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.244	1.00	ug/L
Methylene Chloride	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.681	1.00	ug/L
Tetrachloroethane	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.466	1.00	ug/L
Toluene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.205	1.00	ug/L
trans-1,2-Dichloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.241	1.00	ug/L
trans-1,3-Dichloropropene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.279	1.00	ug/L
Trichloroethene	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.146	1.00	ug/L
Vinyl chloride	EPA 624.1	07/28/21 14:34	07/28/21 14:34	ND	U	0.157	1.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation

Form 1 WETCHEM

Client : Aqua Pro-Tech Laboratories
 Project Name : 1071059
 Lab ID : L2139419-01
 Client ID : 1071059-09
 Sample Location : 1071059
 Sample Matrix : WATER
 Analytical Method : 1,8315A
 Lab File ID : WG1527166,JT.txt
 Sample Amount :
 Digestion Method :

Lab Number : L2139419
 Project Number : 1071059
 Date Collected : 07/21/21 08:10
 Date Received : 07/22/21
 Date Analyzed : 07/23/21 20:03
 Dilution Factor : 1
 Analyst : JT
 Instrument ID : HPLC
 %Solids : N/A
 Date Digested : 07/23/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
50-00-0	Formaldehyde	ND	0.075	0.022	U



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.
Executive Director

May 24, 2021

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

TOWN OF RAMAPO

JUN - 3 2021

**DEPARTMENT OF
PUBLIC WORKS**

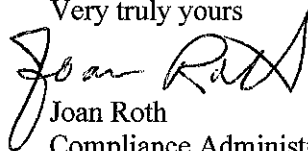
Re: Wastewater Analysis Report/s - 2021

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on April 14, 2021. 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 2022.

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 M. Dolphin, PE

File: Ramapo Landfill (P) - 2021
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340

Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

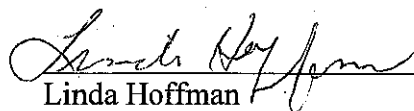
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 04/14/2021 Sample ID: IS-210414-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.77	04/14/2021	BC	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	5	04/20/2021	BC	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	22	04/15/2021	SH	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	3	04/15/2021	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.



May 19, 2021

Linda Hoffman
Laboratory Director
NYSDOH ID No. 10447

No. of pages in this report: **10**

ROCKLAND COUNTY SEWER DISTRICT #1
4 RTE 340 ORANGEBURG, NY 10962

CHAIN OF CUSTODY DOCUMENT

FACILITY SAMPLED:

RAMAPO LANDFILL, Hillburn

(Permit No. 9 - Expired 8/14/2015)

SEMI-ANNUAL

LOCATION SAMPLED:

Manhole immediately upstream of wetwell near road
ID Format (CY - MM - DD)

SAMPLE ID NO. **IS-210414** - RLF

pH CALIBRATION DATE: 1st 4/13/12 2nd 7/15/12 3rd 7/30/12 ANALYST: 1st SC 2nd SC
Buffer 4 Reading: 4.00 Buffer 7 Reading: 7.52 Buffer 10 Reading: 10.56 Slope: 14/104
Buffer 4 Reading: 4.00 Buffer 7 Reading: 7.00 Buffer 10 Reading: 10.00

*****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. OC _____

Time: _____ Done By: _____

SAMPLE INFORMATION

COMPOSITE	DATE	TIME	SAMPLER'S SIGNATURE	pH	TEMP. (°C)	TYPE	PLASTIC OR GLASS	TOTAL # OF BOTTLES	VOLUME mL	BOB. COB. TSS (unpreserved)	METALS (HNO ₃)	CHLORIDES, TDS (unpreserved)	AMMONIA, TKN, Total Phosphate (H ₂ SO ₄)	TOTAL AVAILABLE CYANIDE (NaOH)	Formaldehyde (none)	PHENOL (H ₂ SO ₄)	Oil and Grease, TPH (HCl)	VOCs, EPA 624, (HCl)	SEMI-VOLATILES, EPA 625 (unpreserved)	PCBs & Pesticides (unpreserved)
START	4/13/12	9:23am	[Signature]	6.02	12.3	COMP.	PLASTIC	1	1000	X										
END	4/14/12	9:36am	[Signature]	6.17	10.0	COMP.	PLASTIC	1	500											
						COMP.	PLASTIC	1	250											
						COMP.	PLASTIC	1	250											
						COMP.	PLASTIC	1	500											
						GRAB	PLASTIC	1	500											
						GRAB	AMBER	1	1000											
						GRAB	AMBER	1	500											
						GRAB	AMBER	1	1000											
						GRAB	Glass Vial	2	40											
						GRAB	Glass Amber	2	1000											
						GRAB	Glass Amber	2	1000											

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.

SAMPLES RELINQUISHED BY:

[Signature]

DATE:

4/14/12

SAMPLES RECEIVED BY:

[Signature]

DATE:

4/14/12

COMMENTS:

Metals (16) to be analyzed are B, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Hg, Mo, Ni, Se, Ag, Tl, Zn

10:40am

10:40am



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-20 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	04/20/21 12:00	04/20/21 14:15	1.21			0.200	mg/L
Chloride	EPA 300.0	04/21/21 14:45	04/21/21 14:45	118			5.00	mg/L
Phosphorus	SM 4500-P B5-11 plus E-11	04/19/21 15:06	04/20/21 10:00	0.0590			0.0100	mg/L
Total Dissolved Solids	SM 2540 C-11	04/16/21 09:05	04/17/21 10:10	517			20.0	mg/L
Total Kjeldahl Nitrogen	SM 4500-N Org B	04/27/21 13:50	04/27/21 16:00	1.30			0.200	mg/L
Total Metals								
Antimony	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Arsenic	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Beryllium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00100	mg/L
Boron	EPA 200.7	04/15/21 14:00	04/26/21 17:06	0.105			0.0500	mg/L
Cadmium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Chromium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.0100	mg/L
Copper	EPA 200.8	04/15/21 14:00	04/23/21 15:00	0.0116			0.00200	mg/L
Lead	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Manganese	EPA 200.8	04/15/21 14:00	04/23/21 15:00	0.342			0.00200	mg/L
Mercury	EPA 245.1	04/15/21 08:20	04/15/21 12:33	ND	U		0.000500	mg/L
Molybdenum	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Nickel	EPA 200.8	04/15/21 14:00	04/23/21 15:00	0.00344			0.00200	mg/L
Selenium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00600	mg/L
Silver	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Thallium	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.00200	mg/L
Zinc	EPA 200.8	04/15/21 14:00	04/23/21 15:00	ND	U		0.0300	mg/L

FootNotes

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D - Indicates result is based on a dilution
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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	04/15/21 09:21	04/15/21 15:23	ND	U		0.0100	mg/L
Cyanide (amenable)	EPA 335.1/ 4500CN-G	04/26/21 08:21	04/26/21 08:22	ND	U		0.0100	mg/L
Oil & Grease	EPA 1864A	04/20/21 16:20	04/20/21 16:20	ND	U		5.00	mg/L
Oil & Grease (HEM-SGT)	EPA 1864A (SGT)	04/20/21 16:20	04/20/21 16:20	ND	U		5.00	mg/L
Phenols	EPA 420.1	04/19/21 10:46	04/19/21 17:46	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
1,2-Diphenylhydrazine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.180	2.00	ug/L
2,4,6-Trichlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.137	2.00	ug/L
2,4-Dichlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.152	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.179	2.00	ug/L
2,4-Dinitrophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.326	5.00	ug/L
2,4-Dinitrotoluene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.108	2.00	ug/L
2,6-Dinitrotoluene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.143	2.00	ug/L
2-Chloronaphthalene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.122	2.00	ug/L
2-Chlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
3,4-Dichlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.162	2.00	ug/L
3,3'-Dichlorobenzidine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.110	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0793	2.00	ug/L
4-Bromophenyl-phenyl ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.191	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.141	2.00	ug/L
4-Chlorophenyl phenyl ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.136	2.00	ug/L
4-Nitrophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.168	2.00	ug/L
Acenaphthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.100	2.00	ug/L
Acenaphthylene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.140	2.00	ug/L
Anthracene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.121	2.00	ug/L
Benzidine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	7.86	10.0	ug/L
Benzo(a)anthracene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.110	2.00	ug/L
Benzo(a)pyrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.147	2.00	ug/L
Benzo(b)fluoranthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
Benzo(g,h,i)perylene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0652	2.00	ug/L
Benzo(k)fluoranthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0468	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.112	2.00	ug/L
bis(2-chloroethyl)ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.121	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.132	2.00	ug/L
bis(2-ethylhexyl)phthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.183	2.00	ug/L
Butylbenzylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.190	2.00	ug/L

FootNotes

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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
BNA+25 Semivolatile Organics - GC/MS								
Chrysene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.129	2.00	ug/L
Dibenzo(a,h)anthracene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0900	2.00	ug/L
Diethylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.123	2.00	ug/L
Dimethylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.388	2.00	ug/L
Di-n-butylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.131	2.00	ug/L
Di-n-octylphthalate	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.139	2.00	ug/L
Fluoranthene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.129	2.00	ug/L
Fluorene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.109	2.00	ug/L
Hexachlorobenzene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.183	2.00	ug/L
Hexachlorobutadiene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.279	2.00	ug/L
Hexachlorocyclopentadiene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.205	2.00	ug/L
Hexachloroethane	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
Indeno(1,2,3-cd)pyrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0974	2.00	ug/L
Isophorone	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.111	2.00	ug/L
Naphthalene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0807	2.00	ug/L
Nitrobenzene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.146	2.00	ug/L
Nitroso-dimethylamine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.107	2.00	ug/L
Nitroso-di-n-propylamine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.130	2.00	ug/L
n-Nitrosodiphenylamine	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0626	2.00	ug/L
Pentachlorophenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.152	2.00	ug/L
Phenanthrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0725	2.00	ug/L
Phenol	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.0973	2.00	ug/L
Pyrene	EPA 625.1	04/16/21 16:30	04/20/21 03:39	ND	U	0.115	2.00	ug/L
Pesticides								
4,4'-DDD	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000378	0.0200	ug/L
4,4'-DDE	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000234	0.0200	ug/L
4,4'-DDT	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000319	0.0200	ug/L
Aldrin	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000527	0.0200	ug/L
alpha-BHC	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000255	0.0200	ug/L
beta-BHC	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000371	0.0200	ug/L
Chlordane	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000327	0.0500	ug/L
delta-BHC	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000320	0.0200	ug/L
Dieldrin	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000271	0.0200	ug/L
Endosulfan I	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000380	0.0200	ug/L
Endosulfan II	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000254	0.0200	ug/L
Endosulfan sulfate	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000138	0.0200	ug/L

FootNotes

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AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Pesticides								
Endrin	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000229	0.0200	ug/L
Endrin aldehyde	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000318	0.0200	ug/L
gamma-BHC (Lindane)	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000241	0.0200	ug/L
Heptachlor	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000563	0.0200	ug/L
Heptachlor Epoxide	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000302	0.0200	ug/L
Methoxychlor	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.000343	0.0200	ug/L
Toxaphene	EPA 608.3	04/16/21 09:55	04/19/21 18:45	ND	U	0.0237	0.200	ug/L
PCBs								
Aroclor-1016	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.0497	0.500	ug/L
Aroclor-1221	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.352	0.500	ug/L
Aroclor-1232	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.109	0.500	ug/L
Aroclor-1242	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.185	0.500	ug/L
Aroclor-1248	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.0933	0.500	ug/L
Aroclor-1254	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.103	0.500	ug/L
Aroclor-1260	EPA 608.3	04/16/21 10:01	04/17/21 11:55	ND	U	0.0784	0.500	ug/L
vO+15 Volatile Organics - GC/MS								
1,1,1-Trichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.216	1.00	ug/L
1,1,2,2-Tetrachloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.218	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.476	1.00	ug/L
1,1-Dichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.393	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.149	1.00	ug/L
1,2,4-Trichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.437	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.210	1.00	ug/L
1,2-Dichloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.306	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.287	1.00	ug/L
1,3-Dichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.287	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.238	1.00	ug/L
2-Chloroethylvinyl Ether	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.601	1.00	ug/L
Acrolein	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	1.57	2.00	ug/L
Acrylonitrile	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.606	2.00	ug/L
Benzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.129	1.00	ug/L
Bromodichloromethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.258	1.00	ug/L
Bromoform	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.421	1.00	ug/L
Bromomethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.702	2.00	ug/L
Carbon Tetrachloride	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.372	1.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation



AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

Analytical Results Summary

All projects
1040662-21 (Wastewater)

IS-210414-RLF

Collected
04/14/2021 09:36

Received
04/14/2021 12:35

Contact
Linda Hoffman

Lab Section/ Analysis		Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
VO+15 Volatile Organics - GC/MS									
Chlorobenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.300	1.00	ug/L	
Chlorodibromomethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.504	1.00	ug/L	
Chloroethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.299	2.00	ug/L	
Chloroform	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.365	1.00	ug/L	
Chloromethane	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.758	1.00	ug/L	
cis-1,3-Dichloropropene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.294	1.00	ug/L	
EthylBenzene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.244	1.00	ug/L	
Methylene Chloride	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.681	1.00	ug/L	
Tetrachloroethene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.466	1.00	ug/L	
Toluene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.205	1.00	ug/L	
trans-1,2-Dichloroethene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.241	1.00	ug/L	
trans-1,3-Dichloropropene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.279	1.00	ug/L	
Trichloroethene	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.146	1.00	ug/L	
Vinyl chloride	EPA 624.1	04/24/21 02:25	04/24/21 02:25	ND	U	0.157	1.00	ug/L	

FootNotes

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D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation

Form 1
WETCHEM

Client : Aqua Pro-Tech Laboratories
Project Name : 1040662
Lab ID : L2119040-03
Client ID : 1040662-21
Sample Location :
Sample Matrix : WATER
Analytical Method : 1,8315A
Lab File ID : WG1486919,JT.txt
Sample Amount :
Digestion Method :

Lab Number : L2119040
Project Number : 1040662
Date Collected : 04/14/21 09:36
Date Received : 04/14/21
Date Analyzed : 04/19/21 22:07
Dilution Factor : 1
Analyst : JT
Instrument ID : HPLC
%Solids : N/A
Date Digested : 04/16/21

CAS NO.	Parameter	mg/l			Qualifier
		Results	RL	MDL	
50-00-0	Formaldehyde	ND	0.075	0.022	U



Low	Medium	High

Turn-Around Time	APR Standard 2 Weeks Rush (Choose One Below) 1 Day 3 Days 1 Week	2 Days Other (Specify Below)	3 Days

Date and Time Required: _____
 **May Need Lab Approval

Report / Electronic Format	Results Only / NY ASP-A Reduced: NY DEP Full: NY DEP / NY ASP-B State Format/E3 Reporting

Excel Summary	EnviroData	HazMat EDD
EQIS		

SPQR # _____

PMSD # _____

U.S. DEPARTMENT OF JUSTICE

RELINQUISHED BY:	Print: _____ Sign: _____	RECEIVED BY:	Print: _____ Sign: _____	Date: _____ Time: _____
RELINQUISHED BY:	Print: _____ Sign: _____	RECEIVED BY:	Print: _____ Sign: _____	Date: _____ Time: _____
RELINQUISHED BY:	Print: _____ Sign: _____	RECEIVED BY:	Print: _____ Sign: _____	Date: _____ Time: _____

CERTIFICATIONS: NELAP (National Environmental Accreditation Program) NELAP #37010 PADEP #68-02503 NYDOH #11634

APL

AQUA PRO-TECH LABORATORIES
Certified Environmental Testing

4/15/21

SUBCONTRACT ORDER

62119040

SENDING LABORATORY:

Aqua Pro-Tech Laboratories
1275 Bloomfield Ave, Bldg 6
Fairfield, NJ 07004
Phone: (973) 227-0422
Fax: (973) 227-2183

Project Mgr: Matthew Cordova
Email: mcordova@aquaprotechlabs.com

Send Invoice to: AP@AquaProTechLabs.com

Send Report to: Reporting@AquaProTechLabs.com

RECEIVING LABORATORY:

Alpha Analytical- Mahwah Service Centre
35 Whitney Road, Suite 5
Mahwah, NJ 07430
Phone: (201) 847-9100
Fax:

Turn-Around Time

☒	APL Standard 2 Weeks
☐	Rush (Choose One Below)
☐	24 Hr.
☐	48 Hr.
☐	72 Hr.
☐	1 Week
☐	** Other (provide Date/Time)

Report / Electronic Format

☒	Results Only
☐	NJ DEP Reduced
☐	NJ DEP Full
☐	State Forms/E2 Reporting
☐	Email Delivery
☐	Hardcopy EDO
☐	Excel

PWSID # _____ SRP# _____

Date _____ Time _____
***May Need Lab Approval

APL Order ID: 1040662

Laboratory ID	APL Lab ID	Sampled	Sample Type	Matrix	Analysis Requested	[Comments]

1040662-08	1040662-08	04/14/2021 08:50	Composite	WW	Mercury - Sub	Containers Supplied: Poly 500mL (A)
Sample Name/Location: PS-210414-EFF1 Comments:						

1040662-09	1040662-09	04/14/2021 08:50	Composite	WW	Mercury - Sub	Containers Supplied: Poly 500mL (A)
Sample Name/Location: PS-210414-EFF2 Comments:						

1040662-21	1040662-21	04/14/2021 09:36	Grab	WW	Formaldehyde	Containers Supplied: Subcontract Container (J)
Sample Name/Location: IS-210414-RLF Comments:						

Released By

Charles APL

Date / Time

4/14 1630

Received By

Walter Banger

Date / Time

4/14/21 1830

Released By

Walter Banger

Date / Time

4/15 1600
16:00

Received By

WAL - APL

Date / Time

4/15/21 1600



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.
Executive Director

November 13, 2020

Michael Sadowski, PE
Deputy Director
Town of Ramapo, DPW
Pioneer Avenue
Tallman, N.Y. 10982

NOV 19 2020

DEPARTMENT OF
PUBLIC WORKS

Re: Wastewater Analysis Report/s - 2020

Dear Mr. Sadowski:

Enclosed is the analysis report/s for the sample/s collected from your facility on October 7, 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 M. Dolphin

File: Ramapo Landfill (P) - 2020
Reader

ROCKLAND COUNTY SEWER DISTRICT NO. 1

4 Route 340

Orangeburg, N.Y. 10962

PRETREATMENT PROGRAM - SAMPLE ANALYSIS REPORT

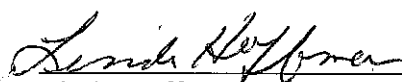
REPORT FOR: RAMAPO LANDFILL, HILBURN, NY

LOCATION SAMPLED: Manhole Immediately Upstream of Wetwell

MATRIX: Water DATE SAMPLED: 10/07/2020 Sample ID: IS-201007-RLF

PARAMETER	RESULTS	DATE OF ANALYSIS	ANALYST INITIALS	METHOD AS PER 40CFR
pH	6.16	10/07/2020	BC	SM 4500-H-B
BIOCHEMICAL OXYGEN DEMAND (mg/L)	4	10/13/2020	BC	SM 5210 B
CHEMICAL OXYGEN DEMAND (mg/L)	32	10/08/2020	GA	SM 5220 D
TOTAL SUSPENDED SOLIDS (mg/L)	2	10/08/2020	GA	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.



March 20, 2020

Linda Hoffman

Laboratory Director

NYSDOH ID No. 10447

No. of pages in this report: 2

Analytical Results Summary

All projects

0100312-12 (Wastewater)

IS-201007-RLF

Collected
10/07/2020 08:44Received
10/07/2020 15:30Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Cyanide	SM 4500-CN C-11 plus E-11	10/09/20 11:48	10/09/20 12:03	ND	U		0.0100	mg/L
Oil & Grease	EPA 1664A	10/21/20 18:00	10/21/20 18:00	ND	U		5.10	mg/L
Phenols	EPA 420.1	10/12/20 17:47	10/12/20 17:47	ND	U		0.0500	mg/L
BNA+25 Semivolatile Organics - GC/MS								
2,4,6-Trichlorophenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.137	2.00	ug/L
2,4-Dimethylphenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.179	2.00	ug/L
4-Nitrotoluene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.108	2.00	ug/L
2-Chloronaphthalene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.122	2.00	ug/L
2-Nitrophenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.162	2.00	ug/L
4,6-Dinitro-2-methylphenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0793	2.00	ug/L
4-Chloro-3-methylphenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.141	2.00	ug/L
4-Nitrophenol	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.168	2.00	ug/L
Acenaphthylene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.140	2.00	ug/L
Benzidine	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	7.86	10.0	ug/L
Benzo(a)pyrene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.147	2.00	ug/L
Benzo(g,h,i)perylene	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.0652	2.00	ug/L
bis(2-chloroethoxy)methane	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.112	2.00	ug/L
bis(2-chloroisopropyl)ether	EPA 625.1	10/08/20 16:25	10/10/20 01:57	ND	U	0.132	2.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation

Analytical Results Summary

All projects

0100312-12 (Wastewater)

IS-201007-RLF

Collected
10/07/2020 08:44

Received
10/07/2020 15:30

Contact
Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
Pesticides								
Endosulfan II	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000254	0.0200	ug/L
Endrin	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000229	0.0200	ug/L
gamma-BHC (Lindane)	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000241	0.0200	ug/L
Heptachlor Epoxide	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.000302	0.0200	ug/L
Toxaphene	EPA 608.3	10/08/20 11:45	10/12/20 19:58	ND	U	0.0237	0.200	ug/L
PCBs								
Aroclor-1221	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.352	0.500	ug/L
Aroclor-1242	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.185	0.500	ug/L
Aroclor-1254	EPA 608.3	10/08/20 11:45	10/09/20 10:46	ND	U	0.103	0.500	ug/L
VO+15 Volatile Organics - GC/MS								
1,1,1-Trichloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.216	1.00	ug/L
1,1,2-Trichloroethane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.476	1.00	ug/L
1,1-Dichloroethene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.149	1.00	ug/L
1,2-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.210	1.00	ug/L
1,2-Dichloropropane	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.267	1.00	ug/L
1,4-Dichlorobenzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.238	1.00	ug/L
Acrolein	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	1.57	2.00	ug/L
Benzene	EPA 624.1	10/17/20 01:05	10/17/20 01:05	ND	U	0.129	1.00	ug/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation

Analytical Results Summary

All projects

0100312-17 (Drinking Water)

LS-201007-DI

Collected 10/07/2020 09:45	Received 10/07/2020 15:30	Contact Linda Hoffman

Lab Section/ Analysis	Method	Prepared	Analyzed	Result	Qual	MDL	RL	Units
General Chemistry								
Ammonia as N	SM 4500-NH3 B plus D-11	10/15/20 11:50	10/15/20 13:00	ND	U		0.200	mg/L
Total Organic Carbon	SM 5310 C-11	10/15/20 10:00	10/20/20 09:02	ND	U		0.500	mg/L

FootNotes

RL - Reporting limit
MDL - Minimum detection limit
ND, U - Indicates compound analyzed for but not detected
J - Indicates estimated value

B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns.
H - Indicates a Hold Time violation