



NASHOBA ANALYTICAL

A DIVISION OF GRANITE STATE ANALYTICAL SERVICES, LLC

31A Willow Road Ayer, Massachusetts 01432
Phone: 978-391-4428 | website: www.nashobaanalytical.com

Laboratory Report

Lynnfield Center Water District
83 Phillips Road
Lynnfield, MA 01940

Date Printed: 03/31/2023
Work Order #: 2303-03661
Client Job #:
Date Received: 03/22/2023
Sample collected in: Massachusetts

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of the analyzing laboratory's Quality Assurance Plan, Standard Operating Procedures and State Accreditation. This certificate shall not be reproduced, except in full, without the written approval of the analyzing laboratory. The results presented in this report relate to the samples listed on the following pages in the condition in which they were received. Accreditation for each analyte is identified by the * symbol following the analyte name. Location of our analyzing laboratory is identified by the code in the Analyst Column.

A & L Laboratory:
Identified by ME in Analyst Column
155 Center Street, Auburn, Maine 04210
www.allaboratory.com

Granite State Analytical Services LLC:
Identified by NH in Analyst Column
22 Manchester Road, Derry, NH 03038
www.granitestateanalytical.com

Nashoba Analytical:
Identified by MA in the Analyst Column
31A Willow Road, Ayer, MA 01432
www.nashobaanalytical.com

ANALYSIS RELATED NOTES:

- RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.
- DF: "Dilution factor" means the ratio of the volume of the sample to the volume of the final (dilute) solution.
- MDL: "Minimum Detection Limit" means the minimum result which can be reliably discriminated from a blank with a predetermined confidence level.
- A & L Laboratory / Granite State Analytical Services LLC / Nashoba Analytical. accreditation lists can be found on our websites listed above.
- Subcontracted samples will be identified by the Accreditation number of the subcontract laboratory in the analyst field for each analyte and the appropriate laboratory will be listed here. **This report contains data that were produced by a subcontracted laboratory accredited for the fields of testing performed, if available. Accreditation for each analyte is identified by the * symbol following the analyte name.**
Alpha Analytical-Mansfield, 320 Forbes Boulevard, Mansfield, MA 02048 Accreditation # M-MA030
- Data Qualifiers (DQ) Flags provide additional information in regards to the receipt, analysis or quality control of a sample. These are indicated under the DQ Flags Column on your report and listed here if necessary: **Data Qualifier (DQ) Flags: J = Estimated concentration.**

SAMPLE STATE SPECIFIC NOTES:

Additional Narrative or Comments: **Data qualifiers present in subcontract report.**

We appreciate the opportunity to provide you with laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be happy to assist you.

Peter C. Nevius
Laboratory Director

A & L Laboratory: Accreditations: Maine ME00021, New Hampshire 2501, Maine Radon Registration ID # SPC20
Granite State Analytical Services, LLC: Accreditations: New Hampshire 1015; Maine NH00003;
Massachusetts M-NH0003; Rhode Island 101513; Vermont VT-101507
Nashoba Analytical: Accreditations: Massachusetts M-MA1118



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DRINKING WATER COMPLIANCE REPORT

DATE PRINTED: 03/31/2023
SAMPLE ID #: 2303-03661-001
SAMPLED BY: Deshaies, Brian

LAB ID#: M-MA030

| Legend | |
|-----------------------|--|
| Passes | |
| Fails EPA Primary | |
| Fails EPA Secondary | |
| Fails State Guideline | |
| Attention | |

SAMPLE CATEGORY: Routine Sample
SYSTEM NAME: Lynnfield Center Water District
EPA ID#: 3164000
SYSTEM TOWN: Lynnfield
SAMPLE AGENT #:
SAMPLE LOCATION: 10275 STA. #4 (GLEN DRIVE WELLS 5G-8G)

DATE & TIME COLLECTED: 03/22/2023 08:25AM
DATE & TIME RECEIVED: 03/22/2023 10:55AM
WATER SYS TYPE:
RECEIPT TEMP: ON ICE 8.3° CELSIUS
CLIENT JOB #:

BAR CODE:

| Test Description | Results | Test Units | Pass /Fail | DQ Flag | RL | Limit | Method | Analyst | Date & Time Analyzed |
|--|---------|------------|------------|---------|------------|----------|-----------|---------|----------------------|
| 11-chloroeicosafuoro-3-oxaundecane-1-sulfonic Acid* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| 4,8-dioxa-3H-perfluorononanoic acid* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| 9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Date Extracted | - | | | | | No Limit | EPA 537.1 | MA00030 | 03/27/2023 12:00PM |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorobutanesulfonic Acid (PFBS)* | 2.74 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorodecanoic Acid (PFDA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorododecanoic Acid (PFDoA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluoroheptanoic Acid (PFHpA)* | 1.69 | ng/L | | J | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorohexanesulfonic Acid (PFHxS)* | 1.48 | ng/L | | J | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorohexanoic Acid (PFHxA)* | 3.28 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorononanoic Acid (PFNA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |

Peter C. Nevius
 Laboratory Director



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DRINKING WATER COMPLIANCE REPORT

DATE PRINTED: 03/31/2023
SAMPLE ID #: 2303-03661-001
SAMPLED BY: Deshaies, Brian

LAB ID#: M-MA030

| Legend | |
|-----------------------|---|
| Passes | ✓ |
| Fails EPA Primary | ⊗ |
| Fails EPA Secondary | ▼ |
| Fails State Guideline | ✕ |
| Attention | ⚠ |

SAMPLE CATEGORY: Routine Sample
SYSTEM NAME: Lynnfield Center Water District
EPA ID#: 3164000
SYSTEM TOWN: Lynnfield
SAMPLE AGENT #:
SAMPLE LOCATION: 10275 STA. #4 (GLEN DRIVE WELLS 5G-8G)

DATE & TIME COLLECTED: 03/22/2023 08:25AM
DATE & TIME RECEIVED: 03/22/2023 10:55AM
WATER SYS TYPE:
RECEIPT TEMP: ON ICE 8.3° CELSIUS
CLIENT JOB #:

BAR CODE:

| Test Description | Results | Test Units | Pass /Fail | DQ Flag | RL | Limit | Method | Analyst | Date & Time Analyzed |
|---|---------|------------|------------|---------|------------|------------------|-----------------|---------|----------------------|
| Perfluorooctanesulfonic Acid (PFOS)* | 3.39 | ng/L | | | Sub Report | | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorooctanoic Acid (PFOA)* | 6.02 | ng/L | | | Sub Report | | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorotetradecanoic Acid (PFTA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluorotridecanoic Acid (PFTrDA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Perfluoroundecanoic Acid (PFUnA)* | <2.00 | ng/L | | | Sub Report | No Limit | EPA 537.1 | MA00030 | 03/28/2023 04:54PM |
| Total 6 (PFOS PFOA PFNA PFHxS PFHpA PFDA) | 9.41 | ng/L | ✓ | | Sub Report | 20 ng/L Proposed | N/A calculation | MA00030 | 03/28/2023 04:54PM |

Peter C. Nevius
 Laboratory Director



ANALYTICAL REPORT

| | |
|-----------------|--|
| Lab Number: | L2315076 |
| Client: | Nashoba Analytical, LLC 31A Willow Rd Ayer, MA 01432 |
| ATTN: | Maria Braun |
| Phone: | (978) 391-4428 |
| Project Name: | LYNNFIELD CENTER WATER DISTRIC |
| Project Number: | 3164000 |
| Report Date: | 03/29/23 |

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

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



Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

| Alpha Sample ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
|----------------------------|---|---------------|----------------------------|---------------------------------|---------------------|
| L2315076-01 | 10275 STA. #4 (GLEN DRIVE WELLS 5G-8G) | DW | 2303-03661 | 03/22/23 08:25 | 03/22/23 |
| L2315076-02 | STA. #4 (GLEN DRIVE WELLS 5G-8G)-FB | DW | 2303-03661 | 03/22/23 08:25 | 03/22/23 |

Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

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: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

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:



Ashley Boucher

Title: Technical Director/Representative

Date: 03/29/23

ORGANICS

SEMIVOLATILES

Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

SAMPLE RESULTS

Lab ID: L2315076-01
Client ID: 10275 STA. #4 (GLEN DRIVE WELLS 5G-8G)
Sample Location: 2303-03661

Date Collected: 03/22/23 08:25
Date Received: 03/22/23
Field Prep: Not Specified

Sample Depth:

Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 03/28/23 16:54
Analyst: CAP

Extraction Method: EPA 537.1
Extraction Date: 03/27/23 12:00

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-------|-----------------|
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab | | | | | | |
| Perfluorobutanesulfonic Acid (PFBS) | 2.74 | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorohexanoic Acid (PFHxA) | 3.28 | | ng/l | 2.00 | 0.602 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluoroheptanoic Acid (PFHpA) | 1.69 | J | ng/l | 2.00 | 0.602 | 1 |
| Perfluorohexanesulfonic Acid (PFHxS) | 1.48 | J | ng/l | 2.00 | 0.602 | 1 |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorooctanoic Acid (PFOA) | 6.02 | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorononanoic Acid (PFNA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorooctanesulfonic Acid (PFOS) | 3.39 | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorodecanoic Acid (PFDA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS) | ND | | ng/l | 2.00 | 0.602 | 1 |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluoroundecanoic Acid (PFUnA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorododecanoic Acid (PFDoA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorotridecanoic Acid (PFTrDA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| Perfluorotetradecanoic Acid (PFTA) | ND | | ng/l | 2.00 | 0.602 | 1 |
| PFAS, Total (6) | 9.41 | | ng/l | 2.00 | 0.602 | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|------------|-----------|---------------------|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 87 | | 70-130 |
| Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA) | 97 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 100 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 89 | | 70-130 |

Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

SAMPLE RESULTS

Lab ID: L2315076-02
Client ID: STA. #4 (GLEN DRIVE WELLS 5G-8G)-FB
Sample Location: 2303-03661

Date Collected: 03/22/23 08:25
Date Received: 03/22/23
Field Prep: Not Specified

Sample Depth:

Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 03/28/23 17:03
Analyst: CAP

Extraction Method: EPA 537.1
Extraction Date: 03/27/23 12:00

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor |
|---|--------|-----------|-------|------|-------|-----------------|
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab | | | | | | |
| Perfluorobutanesulfonic Acid (PFBS) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorohexanoic Acid (PFHxA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluoroheptanoic Acid (PFHpA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorohexanesulfonic Acid (PFHxS) | ND | | ng/l | 2.00 | 0.632 | 1 |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorooctanoic Acid (PFOA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorononanoic Acid (PFNA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorooctanesulfonic Acid (PFOS) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorodecanoic Acid (PFDA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS) | ND | | ng/l | 2.00 | 0.632 | 1 |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluoroundecanoic Acid (PFUnA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorododecanoic Acid (PFDoA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| 11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorotridecanoic Acid (PFTrDA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| Perfluorotetradecanoic Acid (PFTA) | ND | | ng/l | 2.00 | 0.632 | 1 |
| PFAS, Total (6) | ND | | ng/l | 2.00 | 0.632 | 1 |

| Surrogate | % Recovery | Qualifier | Acceptance Criteria |
|---|------------|-----------|---------------------|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 91 | | 70-130 |
| Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA) | 97 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 100 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 87 | | 70-130 |

Project Name: LYNNFIELD CENTER WATER DISTRICT
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

Method Blank Analysis Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 03/28/23 15:19
Analyst: CAP

Extraction Method: EPA 537.1
Extraction Date: 03/27/23 12:00

| Parameter | Result | Qualifier | Units | RL | MDL |
|---|--------|-----------|-------|------|-------|
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1759269-1 | | | | | |
| Perfluorobutanesulfonic Acid (PFBS) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorohexanoic Acid (PFHxA) | ND | | ng/l | 2.00 | 0.668 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluoroheptanoic Acid (PFHpA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorohexanesulfonic Acid (PFHxS) | ND | | ng/l | 2.00 | 0.668 |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorooctanoic Acid (PFOA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorononanoic Acid (PFNA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorooctanesulfonic Acid (PFOS) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorodecanoic Acid (PFDA) | ND | | ng/l | 2.00 | 0.668 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS) | ND | | ng/l | 2.00 | 0.668 |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluoroundecanoic Acid (PFUnA) | ND | | ng/l | 2.00 | 0.668 |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorododecanoic Acid (PFDoA) | ND | | ng/l | 2.00 | 0.668 |
| 11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorotridecanoic Acid (PFTrDA) | ND | | ng/l | 2.00 | 0.668 |
| Perfluorotetradecanoic Acid (PFTA) | ND | | ng/l | 2.00 | 0.668 |
| PFAS, Total (6) | ND | | ng/l | 2.00 | 0.668 |

| Surrogate | %Recovery | Qualifier | Acceptance Criteria |
|---|-----------|-----------|---------------------|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 93 | | 70-130 |
| Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA) | 102 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 102 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 87 | | 70-130 |

Lab Control Sample Analysis

Batch Quality Control

Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

| Parameter | LCS | | LCSD | | %Recovery Limits | RPD | Qual | RPD Limits |
|--|-----------|------|-----------|------|------------------|-----|------|------------|
| | %Recovery | Qual | %Recovery | Qual | | | | |
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1759269-2 | | | | | | | | |
| Perfluorobutanesulfonic Acid (PFBS) | 84 | | - | | 70-130 | - | | 30 |
| Perfluorohexanoic Acid (PFHxA) | 80 | | - | | 70-130 | - | | 30 |
| Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) | 89 | | - | | 70-130 | - | | 30 |
| Perfluoroheptanoic Acid (PFHpA) | 82 | | - | | 70-130 | - | | 30 |
| Perfluorohexanesulfonic Acid (PFHxS) | 85 | | - | | 70-130 | - | | 30 |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA) | 84 | | - | | 70-130 | - | | 30 |
| Perfluorooctanoic Acid (PFOA) | 89 | | - | | 70-130 | - | | 30 |
| Perfluorononanoic Acid (PFNA) | 92 | | - | | 70-130 | - | | 30 |
| Perfluorooctanesulfonic Acid (PFOS) | 80 | | - | | 70-130 | - | | 30 |
| Perfluorodecanoic Acid (PFDA) | 90 | | - | | 70-130 | - | | 30 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS) | 85 | | - | | 70-130 | - | | 30 |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA) | 80 | | - | | 70-130 | - | | 30 |
| Perfluoroundecanoic Acid (PFUnA) | 97 | | - | | 70-130 | - | | 30 |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) | 75 | | - | | 70-130 | - | | 30 |
| Perfluorododecanoic Acid (PFDoA) | 89 | | - | | 70-130 | - | | 30 |
| 11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS) | 84 | | - | | 70-130 | - | | 30 |
| Perfluorotridecanoic Acid (PFTrDA) | 106 | | - | | 70-130 | - | | 30 |
| Perfluorotetradecanoic Acid (PFTA) | 103 | | - | | 70-130 | - | | 30 |

Lab Control Sample Analysis
Batch Quality Control

Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|--|------------------|------|-------------------|------|---------------------|-----|------|---------------|
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1759269-2 | | | | | | | | |

| Surrogate | LCS %Recovery | Qual | LCSD %Recovery | Qual | Acceptance Criteria |
|---|------------------|------|-------------------|------|------------------------|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 92 | | | | 70-130 |
| Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA) | 106 | | | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 113 | | | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 92 | | | | 70-130 |



Matrix Spike Analysis

Batch Quality Control

Project Name: LYNNFIELD CENTER WATER DISTRICT
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

| 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 EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1759269-3 QC Sample: L2315079-01 Client ID: MS Sample | | | | | | | | | | | | |
| Perfluorobutanesulfonic Acid (PFBS) | 3.31 | 138 | 140 | 99 | | - | - | | 70-130 | - | | 30 |
| Perfluorohexanoic Acid (PFHxA) | 10.6 | 155 | 156 | 94 | | - | - | | 70-130 | - | | 30 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA) | ND | 155 | 161 | 104 | | - | - | | 70-130 | - | | 30 |
| Perfluoroheptanoic Acid (PFHpA) | 6.32 | 155 | 153 | 95 | | - | - | | 70-130 | - | | 30 |
| Perfluorohexanesulfonic Acid (PFHxS) | 1.10J | 142 | 145 | 102 | | - | - | | 70-130 | - | | 30 |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA) | ND | 146 | 143 | 98 | | - | - | | 70-130 | - | | 30 |
| Perfluorooctanoic Acid (PFOA) | 18.4 | 155 | 186 | 108 | | - | - | | 70-130 | - | | 30 |
| Perfluorononanoic Acid (PFNA) | 1.07J | 155 | 172 | 111 | | - | - | | 70-130 | - | | 30 |
| Perfluorooctanesulfonic Acid (PFOS) | 2.74 | 144 | 143 | 97 | | - | - | | 70-130 | - | | 30 |
| Perfluorodecanoic Acid (PFDA) | ND | 155 | 167 | 108 | | - | - | | 70-130 | - | | 30 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS) | ND | 144 | 149 | 103 | | - | - | | 70-130 | - | | 30 |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA) | ND | 155 | 150 | 97 | | - | - | | 70-130 | - | | 30 |
| Perfluoroundecanoic Acid (PFUnA) | ND | 155 | 178 | 115 | | - | - | | 70-130 | - | | 30 |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) | ND | 155 | 138 | 89 | | - | - | | 70-130 | - | | 30 |
| Perfluorododecanoic Acid (PFDoA) | ND | 155 | 165 | 106 | | - | - | | 70-130 | - | | 30 |
| 11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS) | ND | 146 | 143 | 98 | | - | - | | 70-130 | - | | 30 |
| Perfluorotridecanoic Acid (PFTrDA) | ND | 155 | 201 | 130 | | - | - | | 70-130 | - | | 30 |
| Perfluorotetradecanoic Acid (PFTTA) | ND | 155 | 187 | 121 | | - | - | | 70-130 | - | | 30 |

Matrix Spike Analysis

Batch Quality Control

Project Name: LYNNFIELD CENTER WATER DISTRIC

Lab Number: L2315076

Project Number: 3164000

Report Date: 03/29/23

| 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 EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1759269-3 QC Sample: L2315079-01 Client ID: MS Sample

| Surrogate | MS | | MSD | | Acceptance Criteria |
|--|------------|-----------|------------|-----------|---------------------|
| | % Recovery | Qualifier | % Recovery | Qualifier | |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 104 | | | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 90 | | | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 114 | | | | 70-130 |
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 90 | | | | 70-130 |

Lab Duplicate Analysis Batch Quality Control

Project Name: LYNNFIELD CENTER WATER DISTRICT
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1759269-4 QC Sample: L2315056-01 Client ID: DUP Sample | | | | | | |
| Perfluorobutanesulfonic Acid (PFBS) | 6.10 | 6.05 | ng/l | 1 | | 30 |
| Perfluorohexanoic Acid (PFHxA) | 5.99 | 5.94 | ng/l | 1 | | 30 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA) | ND | ND | ng/l | NC | | 30 |
| Perfluoroheptanoic Acid (PFHpA) | 3.33 | 3.27 | ng/l | 2 | | 30 |
| Perfluorohexanesulfonic Acid (PFHxS) | 3.18 | 3.20 | ng/l | 1 | | 30 |
| 4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA) | ND | ND | ng/l | NC | | 30 |
| Perfluorooctanoic Acid (PFOA) | 15.9 | 15.9 | ng/l | 0 | | 30 |
| Perfluorononanoic Acid (PFNA) | ND | ND | ng/l | NC | | 30 |
| Perfluorooctanesulfonic Acid (PFOS) | 5.47 | 5.15 | ng/l | 6 | | 30 |
| Perfluorodecanoic Acid (PFDA) | ND | ND | ng/l | NC | | 30 |
| 9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS) | ND | ND | ng/l | NC | | 30 |
| N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA) | 0.740J | ND | ng/l | NC | | 30 |
| Perfluoroundecanoic Acid (PFUnA) | ND | ND | ng/l | NC | | 30 |
| N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA) | 0.703J | ND | ng/l | NC | | 30 |
| Perfluorododecanoic Acid (PFDoA) | ND | ND | ng/l | NC | | 30 |
| 11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS) | ND | ND | ng/l | NC | | 30 |
| Perfluorotridecanoic Acid (PFTrDA) | ND | ND | ng/l | NC | | 30 |
| Perfluorotetradecanoic Acid (PFTA) | ND | ND | ng/l | NC | | 30 |

Lab Duplicate Analysis
Batch Quality Control

Project Name: LYNNFIELD CENTER WATER DISTRIC

Project Number: 3164000

Lab Number: L2315076

Report Date: 03/29/23

| Parameter | Native Sample | Duplicate Sample | Units | RPD | Qual | RPD Limits |
|---|---------------|------------------|-------|-----|------|------------|
| Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1759269-4 QC Sample: L2315056-01 Client ID: DUP Sample | | | | | | |

| Surrogate | %Recovery | Qualifier | %Recovery | Qualifier | Acceptance Criteria |
|--|-----------|-----------|-----------|-----------|---------------------|
| Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) | 87 | | 89 | | 70-130 |
| 2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA) | 99 | | 101 | | 70-130 |
| Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) | 82 | | 76 | | 70-130 |
| N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA) | 63 | Q | 58 | Q | 70-130 |



Project Name: LYNNFIELD CENTER WATER DISTRIC**Lab Number:** L2315076**Project Number:** 3164000**Report Date:** 03/29/23**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

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

A Absent

Container Information

| Container ID | Container Type | Cooler | Initial pH | Final pH | Temp deg C | Pres | Seal | Frozen Date/Time | Analysis(*) |
|---------------------|--------------------------------|---------------|-----------------------|---------------------|-----------------------|-------------|-------------|-----------------------------|--------------------|
| L2315076-01A | Plastic 250ml Trizma preserved | A | NA | | 3.8 | Y | Absent | | A2-MA-537.1(14) |
| L2315076-01B | Plastic 250ml Trizma preserved | A | NA | | 3.8 | Y | Absent | | A2-MA-537.1(14) |
| L2315076-02A | Plastic 250ml Trizma preserved | A | NA | | 3.8 | Y | Absent | | A2-MA-537.1(14) |

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/PFTeDA | 376-06-7 |
| Perfluorotridecanoic Acid | PFTrDA | 72629-94-8 |
| Perfluorododecanoic Acid | PFDoA | 307-55-1 |
| Perfluoroundecanoic Acid | PFUnA | 2058-94-8 |
| Perfluorodecanoic Acid | PFDA | 335-76-2 |
| Perfluorononanoic Acid | PFNA | 375-95-1 |
| Perfluorooctanoic Acid | PFOA | 335-67-1 |
| Perfluoroheptanoic Acid | PFHpA | 375-85-9 |
| Perfluorohexanoic Acid | PFHxA | 307-24-4 |
| Perfluoropentanoic Acid | PFPeA | 2706-90-3 |
| Perfluorobutanoic Acid | PFBA | 375-22-4 |
| PERFLUOROALKYL SULFONIC ACIDS (PFSAs) | | |
| Perfluorododecanesulfonic Acid | PFDoDS/PFDoS | 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 |
| Perfluoropropanesulfonic Acid | PFPrS | 423-41-6 |
| 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/PFOSA | 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-Chloroeicosafuoro-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: LYNNFIELD CENTER WATER DISTRICT
Project Number: 3164000

Serial_No:03292316:15
Lab Number: L2315076
Report Date: 03/29/23

PFAS PARAMETER SUMMARY

| Parameter | Acronym | CAS Number |
|--|---------|-------------|
| FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs) | | |
| 3-Perfluoroheptyl Propanoic Acid | 7:3FTCA | 812-70-4 |
| 2H,2H,3H,3H-Perfluorooctanoic Acid | 5:3FTCA | 914637-49-3 |
| 3-Perfluoropropyl Propanoic Acid | 3:3FTCA | 356-02-5 |

Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

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: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

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.

Chlordane: 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.)

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'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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.

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

Report Format: DU Report with 'J' Qualifiers



Project Name: LYNNFIELD CENTER WATER DISTRICT
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

Data Qualifiers

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where 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.)

Report Format: DU Report with 'J' Qualifiers



Project Name: LYNNFIELD CENTER WATER DISTRIC
Project Number: 3164000

Lab Number: L2315076
Report Date: 03/29/23

REFERENCES

- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

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, **LCHAT 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.

Nashoba Analytical, LLC

31A Willow Rd, Ayer, MA 01432
 Tel: 978-391-4428 Fax: 978-391-4643

L2315076

Chain of Custody - PFAS Compliant Samples (EPA 537.1)

PWS #: 3164000

PWS Name: Lynnfield Center Water District Primary Lab Number: 2303-031661

Sampled by: (Print Name): Brian Deshaies

| Sample # | Date sampled | Time Sampled | Grab | Sample Type (RS or SS) | Location Code (Must Match Schedule) | Location Description | Container | Preservative | EPA 537.1 | Comments |
|----------|--------------|--------------|------|------------------------|-------------------------------------|----------------------------------|-------------|--------------|-----------|----------|
| 1 | 3/22/23 | 8:25 | X | RS | 10275 | STA. #4 (GLEN DRIVE WELLS 5G-8G) | 2-250 ml. P | 10 | X | -001 |
| 2 | | | X | | | STA. #4 (GLEN DRIVE WELLS 5G-8G) | 1-250 ml. P | 10 | X | -001 FB |
| 3 | | | X | | | | | | | |
| 4 | | | X | | | | | | | |
| 5 | | | X | | | | | | | |
| 6 | | | X | | | | | | | |
| 7 | | | X | | | | | | | |
| 8 | | | X | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |

Preservative: 10 - Trizma

Special Notes/Requirements

Relinquished by:

Date/Time

Received by:

Date/Time

| | | | | | | | |
|-------------------------------------|---|----------------|---------|-------|-------------|---------|-------|
| <input checked="" type="checkbox"/> | IF BOX IS CHECKED, PLEASE REPORT MCL EXCEEDANCES IMMEDIATELY. | 1. [Signature] | 3/22/23 | 10:55 | [Signature] | | |
| <input checked="" type="checkbox"/> | IF BOX IS CHECKED, PLEASE RUN FIELD BLANK(S) IF DETECTS. | 2. J Woodall | 3/22/23 | 13:57 | [Signature] | 3/22/23 | 13:50 |
| | | 3. [Signature] | 3/22/23 | 16:20 | [Signature] | 3/22/23 | 16:20 |
| | | 4. [Signature] | 3/22 | 19:30 | [Signature] | 3/22 | 19:30 |
| | | 5. [Signature] | 3/22 | 21:02 | [Signature] | 3/22/23 | 21:02 |

8.3 cc