



Stantec Consulting Services Inc.

45 Blue Sky Drive, 3rd Floor
Burlington MA 01803-2756

September 29, 2023

Project/File: 195150859

Denise Dembkoski, Town Administrator

380 Great Road
Stow, MA 01775

Dear Ms. Dembkoski,

Reference: Lower Village Public Water Supply Feasibility Study

In accordance with our agreement, we are pleased to submit the Test Well Report prepared by our subconsultant, Verdantas, for the Lower Village Public Water Supply Feasibility Study. We discussed the results of this document in our meeting on April 3, 2023. We made an initial submittal of this document in May and after our recent discussions, we are submitting this updated version.

This Test Well Report is a compilation of the information requested as Task 1 Groundwater Exploration in our scope of services. The report includes the following:

- Data Collection and Review,
- Test Well Program description,
- Description of Conservation Commission Permitting, including Notice of Intent,
- Test Well Report providing all information on the location, potential yields and water quality results for future public water supply sources.

Please let us know if you have any questions and we look forward to completing the remaining tasks in this effort to plan a sustainable public water supply source for the Lower Village Area in Stow.

Respectfully Submitted,

STANTEC CONSULTING SERVICES INC.

Garry McCarthy P.E.

Principal

Phone: (978) 577-1408

Mobile: (978) 857-8030

garry.mccarthy@stantec.com

Attachment: Verdantas Test Well Report, Updated August 21, 2023

August 21, 2023

Project Number 15740-000

Garry F. McCarthy, P.E.
Stantec Consulting Services
5 Burlington Woods Drive
Burlington, MA 01803

Re: Test Well Report REVISED
Lower Village Public Water Supply Feasibility Study
Stow, Massachusetts

Dear Mr. McCarthy,

In accordance with our Subconsultant Agreement, Verdantas LLC (Verdantas; formerly GeoInsight, Inc.) completed a test well program at 144 Red Acre Road approximately 0.5 miles north of the Lower Village area and the open space associated with the development at Heritage Lane adjacent to the south of Lower Village to investigate the possibility of locating a new public water supply well site. Three test wells were installed and one potentially suitable site was identified. This letter provides program details, results, and provides recommendations for future investigations to develop a potential drinking water source.

BACKGROUND

The Town of Stow wants to know if it is feasible to identify and permit a new public water supply to serve the Lower Village business district. The Town selected two nearby town-owned parcels for test wells investigation. These parcels are located at 144 Red Acre Road approximately 0.5 miles north of the Lower Village area and the open space associated with the development at Heritage Lane adjacent to the south of Lower Village. An area map is given in Figure 1.

DATA COLLECTION AND REVIEW

The following applicable information related to the Subject Parcels, was reviewed:

- the Geosphere Environmental Management, Inc. "Groundwater Resource Evaluation," dated December 6, 2006, for the 144 Red Acre Road parcels;
- applicable Conservation Restrictions;
- town meeting land acceptance information;
- surficial geology information as applicable;
- a plan of the Red Acre Road property by Merrill Engineers and Land Surveyors of Hanover MA entitled "Plan of Land, Assessors Map R-31 Lot 57, Red Acre Road, Stow Massachusetts," dated May 11, 2018; and
- a plan of the Heritage Lane property by Lancewood Engineering Inc of Acton Massachusetts Entitled "Record Plan - Elizabeth Brook Farm" dated December 1996.

A favorable test well at the Red Acre Road property was installed by Denis L. Maher, Co. (D.L. Maher) in 1985. D.L. Maher reported that the site could support a production well yielding 300 to 350 gallons per minute in a report to Marilyn Kuenlius dated March 25, 1986. The well was resampled by D.L. Maher in 2000 and limited water quality testing was found to be satisfactory. Its location on the plan is based on the map included in the 2006 GeoSphere report where it is described as “150 to 200 feet northeast of the east edge of the pond in a wooded wetland portion of the property”. There is no record of this well having been pulled out, but it could not be located in the field. Although the exact location of this well is not known, it appears that it does not have an available Zone I radius, and it may be located within wetlands. Therefore, it does not appear to be a viable location for a future production well.

Based upon available information, a Test Well Program Plan was prepared that identified and defined a recommended drilling strategy, including recommended test well locations, permitting requirements, a short-term pumping test plan, and a water quality testing program. The plan included one test well at Heritage Lane and one at Red Acre Road based upon the previously determined budget in the response to the Town Request for Proposals. Site plans of the proposed drilling targets are included as Attachments A and B.

The test well program plan was discussed with Town representatives at a meeting on October 6, 2022. A potential area for investigation in the northern portion of Red Acre Road parcel was found to be infeasible because access could only be from Tuttle Lane through the Captain Sargent Conservation Area which is protected by both Article 97 of the Massachusetts Constitution and state funding grant requirements and is therefore not available for water supply purposes.

The area on the southeast portion Red Acre Road parcel which would have an available 400-foot Zone I was also found to not be viable because that area is planned for a town-sponsored affordable housing development. A location (Target A) that would be viable as a wellfield of three wells (250-foot Zone I) was identified at edge of wetlands. We planned to drill only the center location of the potential future wellfield. Target B is a potential future test well site approximately 350-feet northeast that, if successful, could also be developed as a wellfield of three wells with a 250-foot Zone I radius.

At Heritage Lane, Town representative stated that the landowner to north might be willing to allow a Zone I sanitary protective radius to extend onto his property, so additional targets were selected to the north to allow larger Zone I, and thus accommodating a potentially higher yield. The furthest north target (Target D) was selected for drilling.

The selected test well locations were staked in the field with survey-grade GPS equipment.

CONSERVATION COMMISSION PERMITTING

Verdantas prepared and submitted a Notice of Intent to the Stow Conservation Commission on November 16, 2022 for test well drilling at the 144 Red Acre Road parcel in accordance with the Wetlands Protection Act and Town of Stow Wetlands Bylaw, conservation land regulations and the terms of the Conservation Restriction, dated July 29, 2019. Wetlands permitting was not required for the Heritage Lane parcel.

At the Conservation Commission public hearing on December 6, 2022 test well drilling was approved and the Order of Conditions was issued on December 13, 2022.

TEST WELL RESULTS

D.L. Maher was contracted to conduct the drilling activities which began on March 1, 2022. Complete well logs are attached and descriptions of each are as follows:

HERITAGE LANE

TW1-23: this well penetrated 72 feet of low permeability materials before reaching refusal. The depth to water was 34 feet below ground level. A well screen was not set and the well casing was pulled out. This result was unexpected, as it is contrary to existing mapping which shows the area to be a medium yield aquifer. Glacial sediments can change over short distances and while it is possible that a suitable overburden well could be located at the Heritage Lane property, we do not recommend further overburden well testing at this site. As discussed in the Conclusions below, one or more bedrock wells may be feasible.

RED ACRE ROAD

TW2-23: this well penetrated 53 feet of low permeability materials before reaching refusal. A screen was not set and the casing was pulled out.

TW3-23: This well was not in the original test well plan and was "field selected" considering the failure of TW2-23. This well was drilled to 42 feet then pulled back to 21 feet where a 30-slot screen was set. This well pumped 120 gallons per minute (GPM) despite its shallow depth. An observation well TW3-23A was drilled two feet from this test well and a 4-hour pumping test conducted on TW3-23. Drawdown in the observation well was approximately 1.5 feet from a static water level of 1.70 feet from the top of the pipe at a pumping rate of 85 GPM. Water quality samples were collected for laboratory testing of MADEP secondary parameters and per- and perfluoroalkyl substances (PFAS).

Based upon the data from the 4-hour pumping test, a production wellfield at this location could be expected to produce in the vicinity of 280 GPM (400,000 gallons per day [GPD]) to possibly as much as 350 GPM (500,000 GPD). Additional testing would be necessary to verify this production estimate. It should be noted that the shallow depth is a concern for surface bacteria contamination. Laboratory testing of water quality samples collected after 4-hours of pumping found elevated concentrations of manganese at 0.061 mg/L above its secondary standard of 0.05 mg/L. Several PFAS compounds were detected at

trace levels below laboratory reporting limits. Polyfluoro octanoic acid (PFOA) was detected at 5.22 ng/L which is below the current Massachusetts standard, however, is above the proposed United States Environmental Protection Agency (USEPA) MCL of 4 ng/L. A summary of water quality testing results is provided in Table 1. Well logs and complete laboratory reports are attached.

The TW3-23 well site is approximately 345 feet from the nearest property line of the homes along Red Acre Road to the southeast. The well site could not be moved further northwest because of mapped wetlands. Therefore, this site must be developed as a wellfield which allows a 250-foot Zone I. Under the MADEP definition of a wellfield, there must be at least three wells no more than 50-feet apart, all wells must pump together and the pumping level may not exceed 26 feet below ground surface.

CONCLUSIONS

HERITAGE LANE

The Heritage Lane property should not be discounted as a potential site for a public water supply despite the poor overburden test well result. One or more bedrock wells at that site could potentially provide the yield limited by the Zone I availability. Bedrock wells at each of the targets shown on Attachment B has the potential to provide a total yield of 28,600 GPD (20 GPM). However, interference between the wells is possible and the actual yield of bedrock supply wells at these locations cannot be known until wells are drilled. A substantial access road and tree clearing would be needed to allow the bedrock drill rig into the property. Details of potential wells at Heritage Lane are as follows:

Target	Zone I radius (feet)	Available Yield* (GPD)
A	200	4,642
B	213	5,580
C	229	7,244
D	257	11,134
Total		28,600

*based upon available Zone I well radii, not including the effects of interference between wells.

If further investigation of the Heritage Lane property is desired, a budget of \$50,000 is suggested for drilling two bedrock wells. Laboratory testing of groundwater samples be undertaken to evaluate water quality (including PFAS) so that potential treatment costs can be considered.

If successful bedrock wells are located, permitting through MADEP would include the typical New Source Approval process for sources less than 100,000 gallons per day which should be anticipated to take 1 to 2 years. Tasks include:

- A Preliminary MADEP application (BRP WS 15);
- Minimum 48-hour pumping test with water quality testing;
- A Final Report to MADEP (BRP WS 16);

Date: August 2023
Project Number: 15740-000



\$100,000 is a suggested budget for permitting including the drilling subcontractor and professional services.

RED ACRE ROAD

Test well TW2-23 at the Red Acre Road site appears to be a viable location for a production wellfield (with a 250-foot Zone I radius) with a yield of as much as perhaps 500,000 GPD dependent on further testing. Treatment is recommended for elevated concentrations of manganese. Detections of PFAS are a potential concern requiring possible future treatment if draft USEPA MCLs are finalized.

In order to permit the Red Acre Road site through MADEP, the typical New Source Approval process for sources greater than 100,000 gallons per day would be required which should be anticipated to take 2 to 3 years. Tasks include:

- A Preliminary MADEP application (BRP WS 17);
- Installation of three 8-inch test wells ;
- Minimum 5-day pumping test with water quality testing;
- A Final Report to MADEP with Zone II delineation (BRP WS 19);
- Environmental Notification Form; and
- Water Management Act Permit application.

\$250,000 is a suggested budget for permitting including the drilling subcontractor and professional services.

LIMITATIONS

This report was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the water resources industry. To the extent that Verdantas relied upon information prepared or provided by other parties, Verdantas makes no representation as to the accuracy or completeness of such information. Conditions at and around the described well locations may vary from those described in this letter. Therefore, Verdantas does not provide guarantees, certifications, or warranties (expressed or implied) that water sources can be successfully permitted at the described locations or that the areas are free of environmental impacts.

Please call us at the numbers below if you have any questions regarding this report.

Sincerely,
VERDANTAS LLC

A handwritten signature in blue ink, appearing to read "D. Harwood", written over a light blue circular stamp.

David G. Harwood, P.G.
Senior Hydrogeologist
(978) 506-5064

A handwritten signature in blue ink, appearing to read "D.A. Maclean", written over a light blue circular stamp.

David A. Maclean, P.G., L.S.P.
Senior Consultant
(603) 657-2021

Date: August 2023
Project Number: 15740-000



Attachments

Figure 1: Area Map

Attachment A: Heritage Lane Site Plan

Attachment B: Red Acre Road Site Plan

Attachment C: Well Logs

Attachment D: Laboratory Water Quality Testing Reports

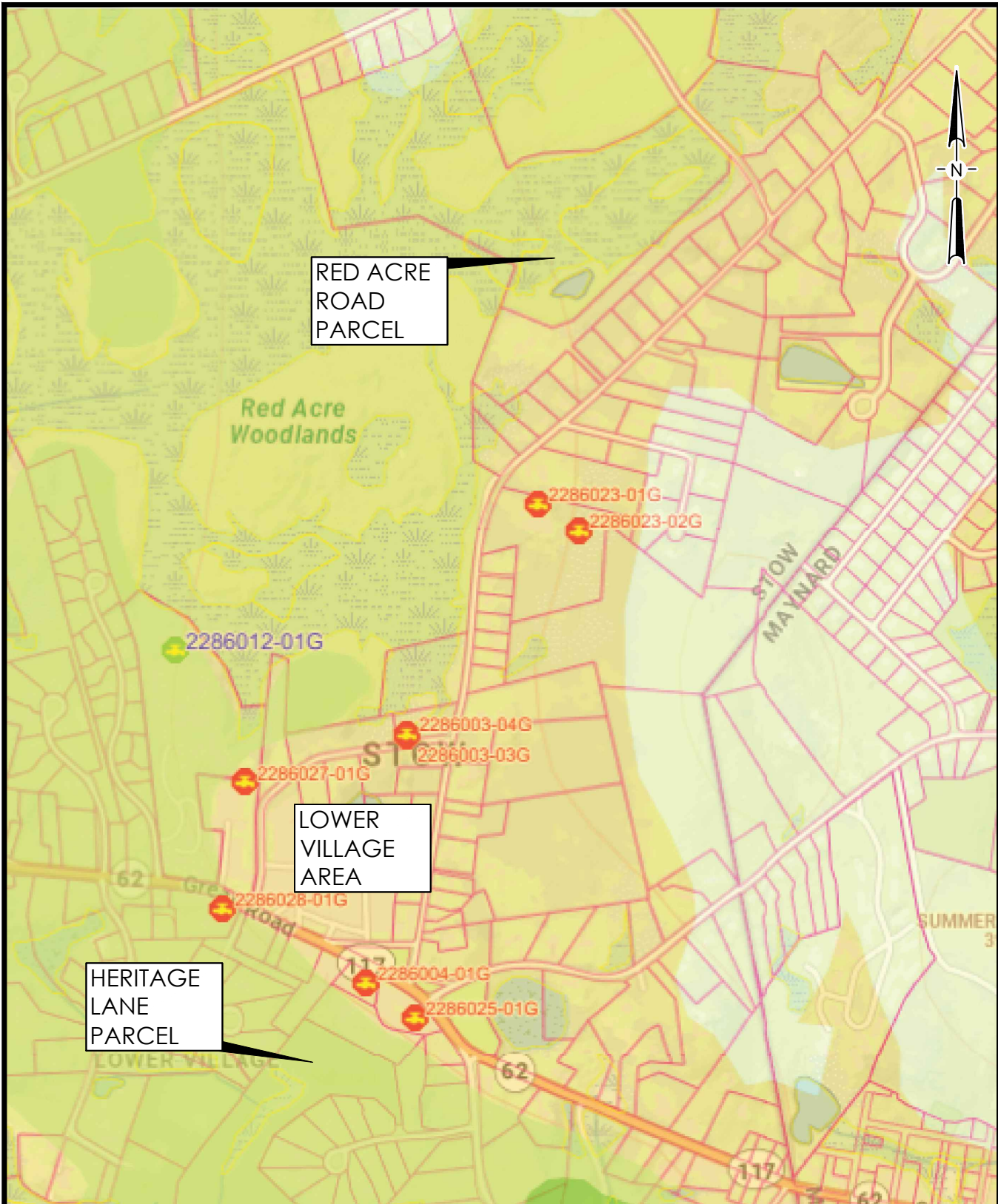
Z:\Project Files\15000\15740\Working\test well report\2023-04-10_15740 test well report.docx

TABLE 1
SUMMARY OF LABORATORY WATER QUALITY RESULTS
TEST WELL 2-23
STOW MASSACHUSETTS

	Units	Standard	4 Hours 3/6/2023
Secondaries			
Iron	mg/l	0.30	0.025
Manganese	mg/l	0.05	0.061
Alkalinity	mg CaCO ₃ /l	NS	12
Calcium	mg/l	NS	12.2
Magnesium	mg/l	NS	3.8
Hardness	mg CaCO ₃ /l	NS	46
Potassium	mg/l	NS	2.8
Turbidity	NTU	5	0.50
Aluminum	mg/l	0.2	0.036
Chloride	mg/l	250	92.0
Color	CU	15	ND (<0)
Copper	mg/l	1	ND(<0.004)
Odor	TON	3	1
pH	SU	6.5-8.5	6.0
Silver	mg/l	0.1	ND (<0.003)
Sulfate	mg/l	250	12.9
TDS	mg/l	500	206
Zinc	mg/l	5	ND(<0.004)
Nitrate	mg/l	10	2.07
Nitrite	mg/l	1	ND (<0.02)
Volatile Organic Compounds (VOCs)			
(note 1)	µg/l	(note 2)	ND (note 3)
PFAS			
PFOS	ng/l	4 (note 4)	1.08 (J Z)
PFOA	ng/l	4 (note 4)	5.22
PFHxS	ng/l	(note 5)	1.11 (J Z)
PFNA	ng/l	(note 5)	ND(<2)
PFHpA	ng/l	NS	1.81 (J Z)
PFHDA	ng/l	NS	ND(<2)
Sum of 6	ng/l	20	5.22
HFPO-DA (GenX)	ng/l	(note 5)	ND(<2)
PFBS	ng/l	(note 5)	0.905
Hazard Index	unitless	1	0.12
PFHxA	ng/l	NS	2.96

NOTES:

1. VOCs tested via EPA Method 524.2
2. MCLs vary for specific compounds.
3. Practical quantitation limits vary for specific compounds.
4. Proposed MCL.
5. Proposed "Hazard Index" MCL.
6. ND(x) = constituent not detected at practical quantitation limits noted in parentheses.
7. NS = not specified.
8. "J" means estimated value below reporting limits.
9. "Z" means QC outside limits.
10. Laboratory detections in bold.



RED ACRE
ROAD
PARCEL

Red Acre
Woodlands

2286012-01G

2286023-01G

2286023-02G

2286003-04G

2286003-03G

2286027-01G

LOWER
VILLAGE
AREA

2286028-01G

HERITAGE
LANE
PARCEL

2286004-01G

2286025-01G


CLIENT: TOWN OF STOW

PROJECT: LOWER VILLAGE
WATER SUPPLY INVESTIGATION

TITLE: AREA MAP

DESIGNED: DGH	DRAWN: DGH	CHECKED: DAM	APPROVED: DAM
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SCALE: 1" = 800'	DATE: 04/04/23	FILE NO.: 15740	PROJECT NO.: 15740
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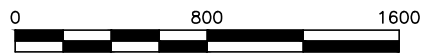


verdantas

FIGURE NO.: 1

SOURCE:

MASSMAPPER



APPROX. SCALE IN FEET

PLOT DATE: 4-4-23
FILE: Z:\Project Files\15000\15740\Working\base map.dwg

PREPARED BY:



OWNER:
TOWN OF STOW

TEST WELL LOCATIONS
HERITAGE LANE
TOWN WATER SUPPLY INVESTIGATION
STOW, MASSACHUSETTS

REVISIONS		
NO.	DATE	DESCRIPTION

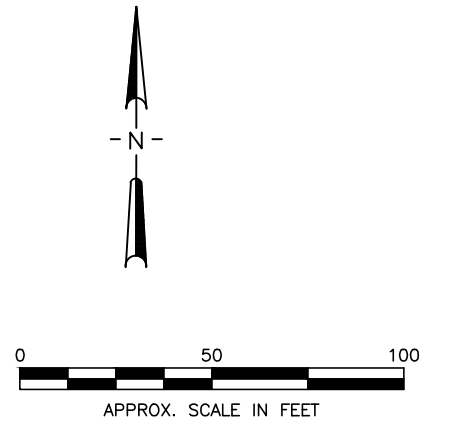
DWG SCALE: 1"=50' PREPARED BY: DGH
DATE ISSUED: 03/16/23 CHECKED BY: DAM
PROJECT #: 15740 APPROVED BY: DAM

DRAWING TITLE:
TEST WELL LOCATIONS
HERITAGE LANE

DRAWING NUMBER:
ATTACHMENT A



- LEGEND**
- TEST WELL LOCATION
 - TARGET FOR FUTURE BEDROCK WELL
 - MASS GIS PROPERTY BOUNDARY
 - MASS GIS WETLAND BOUNDARY
 - POTENTIAL FUTURE ZONE I



NOTES:

1. THIS PLAN WAS BASED UPON A PLAN PREPARED BY LANCEWOOD ENGINEERING INC OF ACTON MA ENTITLED "RECORD PLAN - ELIZABETH BROOK FARM" DATED DECEMBER 1996 AND MASS GIS DATA.
2. TEST WELL LOCATION BASED UPON GPS SURVEY.



OWNER: TOWN OF STOW
PARCEL ID: 31-57A

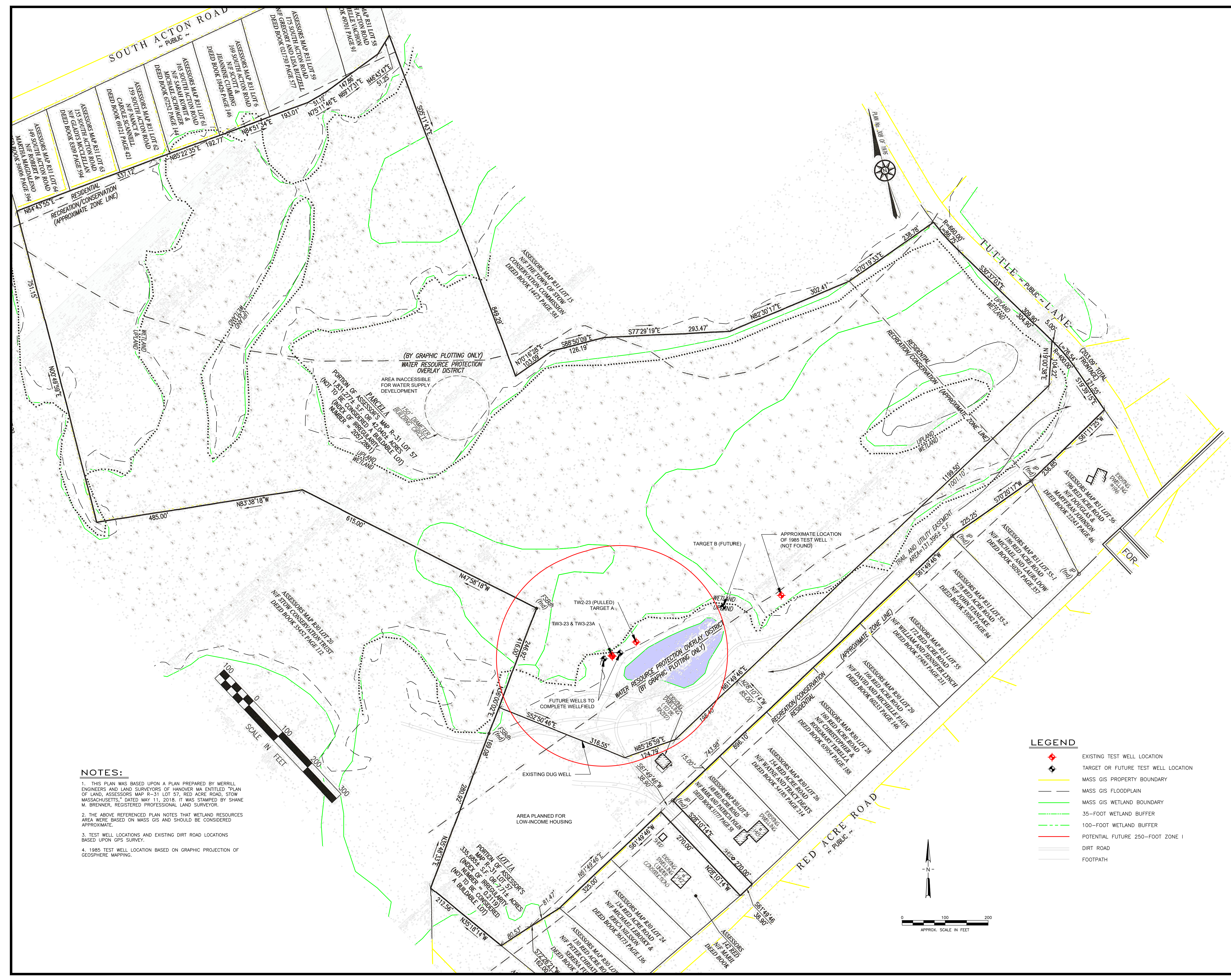
TEST WELL LOCATIONS RED ACRE ROAD TOWN WATER SUPPLY INVESTIGATION STOW, MASSACHUSETTS

REVISIONS		
NO.	DATE	DESCRIPTION

DWG SCALE: 1"=100' PREPARED BY: DGH
DATE ISSUED: 08/21/23 CHECKED BY: DAM
PROJECT #: 15740 APPROVED BY: DAM

DRAWING TITLE:
**TEST WELL LOCATIONS
RED ACRE ROAD**

DRAWING NUMBER:
ATTACHMENT B



NOTES:

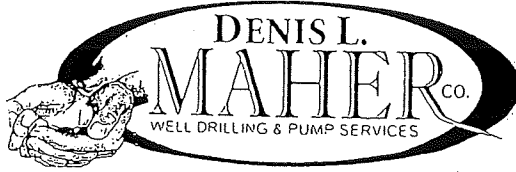
1. THIS PLAN WAS BASED UPON A PLAN PREPARED BY MERRILL ENGINEERS AND LAND SURVEYORS OF HANOVER MA ENTITLED "PLAN OF LAND, ASSESSORS MAP R-31 LOT 57, RED ACRE ROAD, STOW MASSACHUSETTS," DATED MAY 11, 2018. IT WAS STAMPED BY SHANE M. BRENNER, REGISTERED PROFESSIONAL LAND SURVEYOR.
2. THE ABOVE REFERENCED PLAN NOTES THAT WETLAND RESOURCES AREA WERE BASED ON MASS GIS AND SHOULD BE CONSIDERED APPROXIMATE.
3. TEST WELL LOCATIONS AND EXISTING DIRT ROAD LOCATIONS BASED UPON GPS SURVEY.
4. 1985 TEST WELL LOCATION BASED ON GRAPHIC PROJECTION OF GEOSPHERE MAPPING.

LEGEND

- ◆ EXISTING TEST WELL LOCATION
- ◆ TARGET OR FUTURE TEST WELL LOCATION
- MASS GIS PROPERTY BOUNDARY
- MASS GIS FLOODPLAIN
- MASS GIS WETLAND BOUNDARY
- 35-FOOT WETLAND BUFFER
- 100-FOOT WETLAND BUFFER
- POTENTIAL FUTURE 250-FOOT ZONE 1
- DIRT ROAD
- FOOTPATH

WELL LOG

Denis L. Maher Company
7 Sculley Road
P O Box 130
Ayer, MA 01432
Tel: 978-615-4606
Fax: 978-615-4607



TW3A-23

Well No. *TW3-23* D.L.M. Job No.

Driller *Dysem Houghton* Helper *Nate*

Job Name

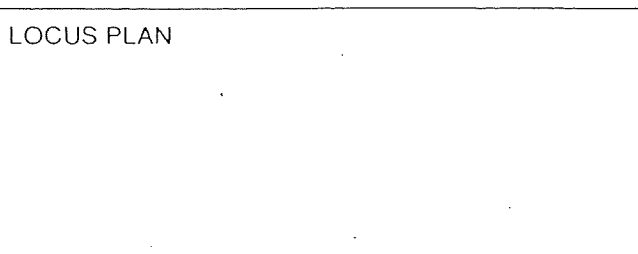
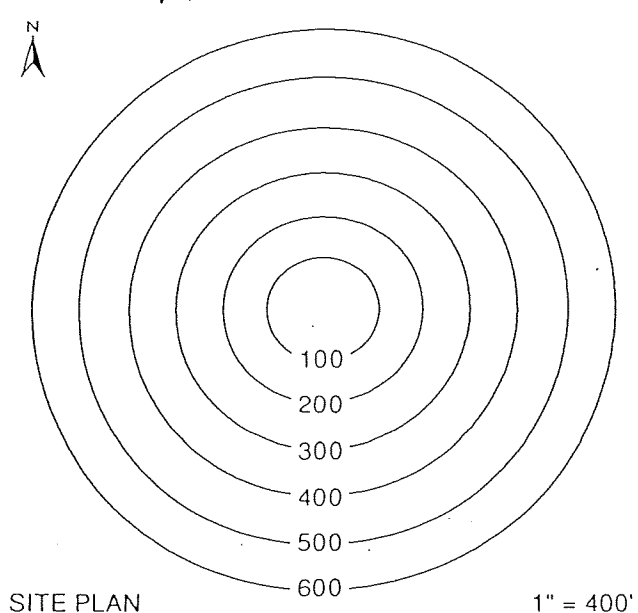
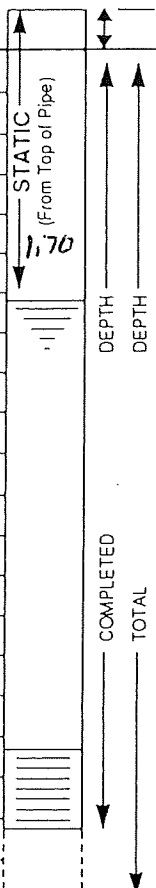
Location *Stow, MA*

Owner's Representative

Date Started: *3/3/23*

Date Finished:

DEPTH		Soil Classification	Loss of Wash Water
From	To		
0'	21'	Brown F-C Sand + Gravel	all
21'	28'	Reddish orange F-m Sand Tan F-m Sand	
28'	37'	Tan Fine-medium Sand, silt Trace of Gravel	
37'	42'	brwnite, Quartz, some clay	
		Pull back to 21'	



Well No.	Diam.	Total Depth	Comp. Depth	Casing Left	SCREEN					Hours Dev.	Hours Pumped
					Length	Exposed	Material	Slot Size	Riser		
TW-3-23	2 1/2"	42'	21'	14'	6	6	SS	30	5' Steel	1	1/2
TW3A-23	2 1/2"	21'	21'	14'	6	6	SS	30	5' Steel	1	4 1/2

Well #		Water Levels			
Date		Obs. No.	Obs. No.	Obs. No.	
Time	G.P.M.	VAC	No.	No.	No.
	Static		1.70		
1	85	14	2.98		
2			2.98		
3			3.07		
4			3.09		
10			3.10		
15			3.15		
20			3.18		
30 - 4 hour			3.21		

REMARKS: TW-3-23 50 GPM / 22 vac
TW3A-23 120 GPM / 27 vac

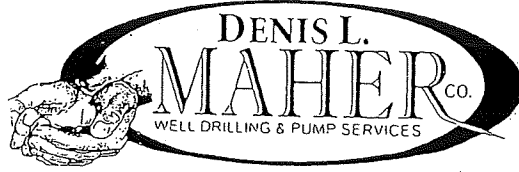
Water Sample Collected

Date _____ Time _____

Sent To: _____

WELL LOG

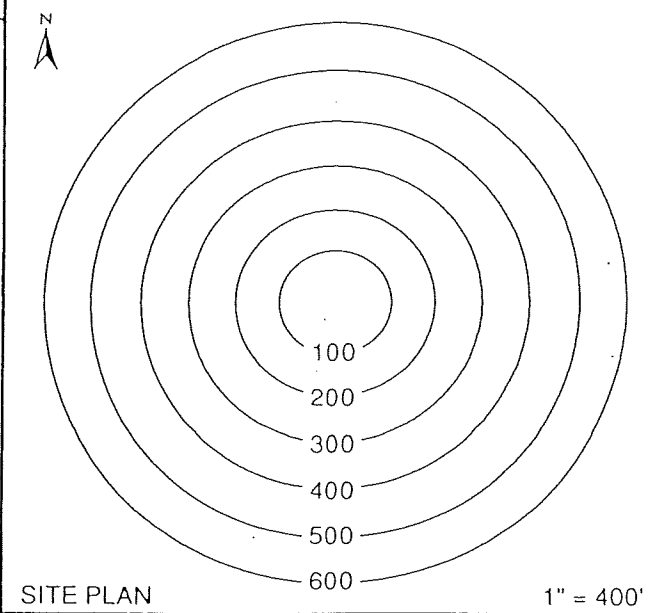
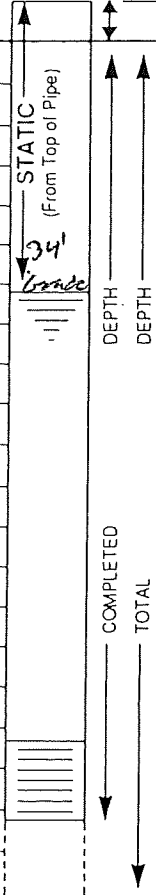
Denis L. Maher Company
 7 Sculley Road
 P O Box 130
 Ayer, MA 01432
 Tel: 978-615-4606
 Fax: 978-615-4607



Well No: FW 1-23 D.L.M. Job No.
 Driller Bryson Houghton Helper Nate
 Job Name _____
 Location Stow, MA
 Owner's Representative _____

Date Started: 3/1/23 Date Finished: _____

DEPTH		Soil Classification	Loss of Wash Water
From	To		
0	28	Brown F-l Sand + Gravel	
28	35	Brown Fine Silty Sand, little clay Traces of gravel	
35'	42'	Sand	
42'	49'	Sand	
49'	56'	Sand	
56'	63'	Sand	
63'	72'	Brown Fine Silty Sand little coarse sand/gravel	
72'		refusal	



SITE PLAN
 LOCUS PLAN

Well No.	Diam.	Total Depth	Comp. Depth	Casing Left	SCREEN					Hours Dev.	Hours Pumped
					Length	Exposed	Material	Slot Size	Riser		

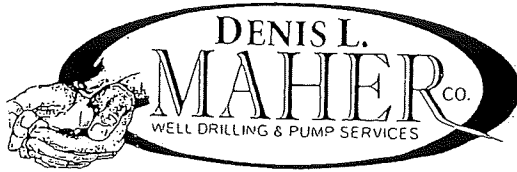
Well #			Water Levels		
Date	G.P.M.	VAC	Obs. No.	Obs. No.	Obs. No.
	Static				

REMARKS:
Pulled well

Water Sample Collected
 Date _____ Time _____
 Sent To: _____

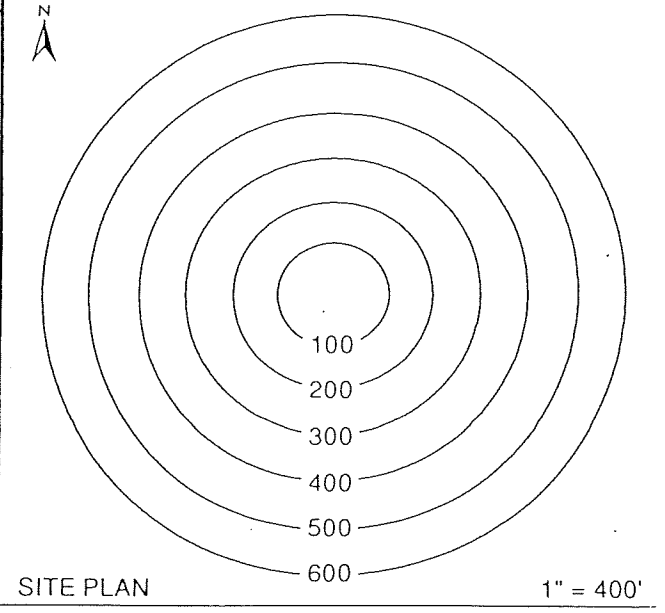
WELL LOG

Denis L. Maher Company
 7 Sculley Road
 P O Box 130
 Ayer, MA 01432
 Tel: 978-615-4606
 Fax: 978-615-4607



Well No. TW2-23 D.L.M. Job No. _____
 Driller Bryant Houghton Helper None
 Job Name _____
 Location Stow, MA
 Owner's Representative _____
 Date Started: 3/2/23 Date Finished: _____

DEPTH		Soil Classification	Loss of Wash Water
From	To		
0'	21'	Brown F-c Sand + Gravel reddish orange Sand	
21'	26'	Reddish orange F-c Sand Some gravel	
26'	37'	Tan F-c Sand, SilT, little gravel	
37'	42'	Granite, Quartz, Some Clay	
42'	49'	Same	
53'		Refusal	



Well No.	Diam.	Total Depth	Comp. Depth	Casing Left	SCREEN					Hours Dev.	Hours Pumped
					Length	Exposed	Material	Slot Size	Riser		

Well #			Water Levels		
Date	G.P.M.	VAC	Obs. No.	Obs. No.	Obs. No.
	Static				

REMARKS:
Pulled well

Water Sample Collected
 Date _____ Time _____
 Sent To: _____



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

Laboratory Report

Verdantas
 30 Shrewsbury Street
 Holden, MA 01520

Date Printed: 03/16/2023
Work Order #: 2303-00659
Client Job #:
Date Received: 03/06/2023
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: H = Hold time non-compliant., J = Estimated concentration., Z = The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPO outside the QC acceptance limits.**

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



NASHOBA ANALYTICAL

A DIVISION OF GRANITE STATE ANALYTICAL SERVICES, LLC

31A Willow Road Ayer, Massachusetts 01432

Phone: 978-391-4428 | website: www.nashobaanalytical.com

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 03/16/2023
CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-001
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-Mass Secondary
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
Turbidity*	0.50	NTU			0.1	No Limit	EPA 180.1	AH-MA	03/06/2023 01:39PM
Aluminum*	0.036	mg/L	✓		0.004	0.2 mg/L	EPA 200.7	ZZ-MA	03/15/2023
Calcium*	12.2	mg/L			0.2	No Limit	EPA 200.7	ZZ-MA	03/15/2023
Copper*	<0.004	mg/L	✓		0.004	1.3 mg/L	EPA 200.7	ZZ-MA	03/15/2023
Iron*	0.025	mg/L	✓		0.004	0.3 mg/L	EPA 200.7	ZZ-MA	03/15/2023
Magnesium	3.8	mg/L			0.1	No Limit	EPA 200.7	ZZ-MA	03/15/2023
Manganese*	0.061	mg/L	▼		0.004	0.05 mg/L	EPA 200.7	ZZ-MA	03/15/2023
Potassium	2.8	mg/L			0.1	No Limit	EPA 200.7	ZZ-MA	03/15/2023
Silver*	<0.003	mg/L	✓		0.003	0.1 mg/L	EPA 200.7	ZZ-MA	03/15/2023
Zinc*	<0.004	mg/L	✓		0.004	5 mg/L	EPA 200.7	ZZ-MA	03/15/2023
Chloride*	92.0	mg/L	✓		1	250 mg/L	EPA 300.0	ZZ-MA	03/06/2023 02:15PM
Sulfate*	12.9	mg/L	✓		1	250 mg/L	EPA 300.0	ZZ-MA	03/06/2023 02:15PM
Color, Apparent	0	CU	✓		0	15	SM 2120B	AH-MA	03/06/2023 01:39PM
Odor	1	TON	✓		0	3 T.O.N.	SM 2150B	AH-MA	03/06/2023 12:43PM
Total Alkalinity*	12	mg CaCO3/L			1	No Limit	SM 2320B	AH-MA	03/06/2023 01:39PM
Hardness (calc.)	46	mg CaCO3/L			1	No Limit	SM 2340 B	ZZ-MA	03/15/2023
Total Dissolved Solids*	206	mg/L	✓		4	500 mg/L	SM 2540C	AH-MA	03/08/2023 03:00PM
pH at 25°C*	6.0	SU	▼	H	N/A	6.5 - 8.5 SU	SM 4500-H-B	AH-MA	03/06/2023 01:39PM

Peter C. Nevius
Laboratory Director



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DATE PRINTED: 03/16/2023
CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-002
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-NO2-NO3-DI
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
Nitrate as N*	2.07	mg/L	✓		0.05	10 mg/L	EPA 300.0	ZZ-MA	03/06/2023 02:15PM
Nitrite as N*	<0.02	mg/L	✓		0.02	1 mg/L	EPA 300.0	ZZ-MA	03/06/2023 02:15PM

Peter C. Nevius
Laboratory Director



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CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 03/16/2023
CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-003
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-VOC524.2-MA
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
1,1,1,2-Tetrachloroethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,1,1-Trichloroethane*	<0.5	ug/L	✓		0.5	200 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,1,2,2-Tetrachloroethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,1,2-Trichloroethane*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,1-Dichloroethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,1-Dichloroethylene*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,1-Dichloropropylene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2,3-Trichlorobenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2,3-Trichloropropane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2,4-Trichlorobenzene*	<0.5	ug/L	✓		0.5	70 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2,4-Trimethylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2-Dibromo-3-chloropropane	<0.5	ug/L			0.5	0.2 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2-Dibromoethane	<0.5	ug/L			0.5	0.05 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2-Dichlorobenzene*	<0.5	ug/L	✓		0.5	600 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2-Dichloroethane*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2-Dichloropropane*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,3,5-Trimethylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,3-Dichlorobenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,3-Dichloropropane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,4-Dichlorobenzene*	<0.5	ug/L	✓		0.5	5.0 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
2,2-Dichloropropane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
2-Butanone (MEK)	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
2-Chlorotoluene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
2-Hexanone	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM

Peter C. Nevius
 Laboratory Director



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CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 03/16/2023
CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-003
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-VOC524.2-MA
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
4-Chlorotoluene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
4-Isopropyltoluene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
4-Methyl-2-pentanone (MIBK)	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Acetone	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Benzene*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Bromobenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Bromochloromethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Bromodichloromethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Bromoform*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Bromomethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Carbon disulfide	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Carbon tetrachloride*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Chlorobenzene*	<0.5	ug/L	✓		0.5	100 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Chloroethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Chloroform*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Chloromethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
cis-1,2-Dichloroethylene*	<0.5	ug/L	✓		0.5	70 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
cis-1,3-Dichloropropylene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Dibromochloromethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Dibromomethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Dichlorodifluoromethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Diethyl ether	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Diisopropyl ether (DIPE)	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Ethyl tert-butyl ether (ETBE)	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM

Peter C. Nevius
 Laboratory Director



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CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-003
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-VOC524.2-MA
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
Ethylbenzene*	<0.5	ug/L	✓		0.5	700 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Hexachlorobutadiene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Isopropylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
m&p-Xylenes	<1	ug/L			1	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Methyl tert-butyl ether (MtBE)*	<0.5	ug/L	✓		0.5	70 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Methylene chloride*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Naphthalene*	<0.5	ug/L	✓		0.5	100 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
n-Butylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Nitrobenzene	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
n-Propylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
o-Xylene	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
sec-Butylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Styrene*	<0.5	ug/L	✓		0.5	100 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
tert-Amyl methyl ether (TAME)	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
tert-Butyl alcohol (TBA)	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
tert-Butylbenzene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Tetrachloroethylene*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Tetrahydrofuran (THF)	<10	ug/L			10	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Toluene*	<0.5	ug/L	✓		0.5	1000 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Total THMs*	<0.5	ug/L	✓		0.5	80 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
Total Xylenes*	<0.5	ug/L	✓		0.5	10000 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
trans-1,2-Dichloroethylene*	<0.5	ug/L	✓		0.5	100 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
trans-1,3-Dichloropropylene*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Trichloroethylene*	<0.5	ug/L	✓		0.5	5 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM

Peter C. Nevius
 Laboratory Director



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SAMPLE ID #: 2303-00659-003
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-VOC524.2-MA
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
Trichlorofluoromethane*	<0.5	ug/L			0.5	No Limit	EPA 524.2	PF-NH	03/08/2023 03:20PM
Vinyl chloride*	<0.5	ug/L	✓		0.5	2 ug/L	EPA 524.2	PF-NH	03/08/2023 03:20PM
1,2-Dichlorobenzene-d4	90	%	✓		0.5	70-130%	EPA 524.2 - SS	PF-NH	03/08/2023 03:20PM
4-Bromofluorobenzene	87	%	✓		0.5	70-130%	EPA 524.2 - SS	PF-NH	03/08/2023 03:20PM

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Laboratory Director



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DATE PRINTED: 03/16/2023
CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-004
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-PFC-18-alpha-MA
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	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	03/09/2023 05:25PM
4,8-dioxa-3H-perfluorononanoic acid*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Date Extracted	-					No Limit	EPA 537.1	MA00030	03/09/2023 10:45AM
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorobutanesulfonic Acid (PFBS)*	0.905	ng/L		JZ	Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorodecanoic Acid (PFDA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorododecanoic Acid (PFDoA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluoroheptanoic Acid (PFHpA)*	1.81	ng/L		JZ	Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorohexanesulfonic Acid (PFHxS)*	1.11	ng/L		JZ	Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorohexanoic Acid (PFHxA)*	2.96	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM

Peter C. Nevius
 Laboratory Director



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A DIVISION OF GRANITE STATE ANALYTICAL SERVICES, LLC

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

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 03/16/2023
CLIENT NAME: Verdantas
CLIENT ADDRESS: 30 Shrewsbury Street
 Holden, MA 01520
SAMPLE ID #: 2303-00659-004
SAMPLED BY: Harwood,Dave
SAMPLE ADDRESS: Stow MA
MORE LOC INFO: Red Acre Road

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

DATE AND TIME COLLECTED: 03/06/2023 11:32AM
DATE AND TIME RECEIVED: 03/06/2023 12:00PM
ANALYSIS PACKAGE: M-PFC-18-alpha-MA
RECEIPT TEMPERATURE: NA
CLIENT JOB #:

Test Description	Result	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date - Time Analyzed
Perfluorononanoic Acid (PFNA)*	<2.00	ng/L			Sub Report		EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorooctanesulfonic Acid (PFOS)*	1.08	ng/L		JZ	Sub Report		EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorooctanoic Acid (PFOA)*	5.22	ng/L			Sub Report		EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorotetradecanoic Acid (PFTA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluorotridecanoic Acid (PFTTrDA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Perfluoroundecanoic Acid (PFUnA)*	<2.00	ng/L			Sub Report	No Limit	EPA 537.1	MA00030	03/09/2023 05:25PM
Total 6 (PFOS PFOA PFNA PFHxS PFHpA PFDA)	5.22	ng/L			Sub Report	20 ng/L Proposed	N/A calculation	MA00030	03/09/2023 05:25PM

Peter C. Nevius
 Laboratory Director



ANALYTICAL REPORT

Lab Number:	L2311706
Client:	Nashoba Analytical, LLC 31A Willow Rd Ayer, MA 01432
ATTN:	Maria Braun
Phone:	(978) 391-4428
Project Name:	2303-00659
Project Number:	2303-00659
Report Date:	03/10/23

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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: 2303-00659
Project Number: 2303-00659

Lab Number: L2311706
Report Date: 03/10/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2311706-01	2303-00659-004	DW	Not Specified	03/06/23 11:32	03/07/23
L2311706-02	2303-00659-004 FB	DW	Not Specified	03/06/23 11:32	03/07/23

Project Name: 2303-00659
Project Number: 2303-00659

Lab Number: L2311706
Report Date: 03/10/23

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: 2303-00659
Project Number: 2303-00659

Lab Number: L2311706
Report Date: 03/10/23

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.

Perfluorinated Alkyl Acids by EPA 537.1

The WG1752778-3 MS recoveries, performed on L2311706-01, are outside the acceptance criteria for perfluorobutanesulfonic acid (pfbs) (165%), perfluoroheptanoic acid (pfhpa) (214%), perfluorohexanesulfonic acid (pfhxs) (173%) and perfluorooctanesulfonic acid (pfos) (181%).

WG1752778-3: The Matrix Spike level is at the Reporting Limit (RL); any detections below the RL in the native sample are not included in the % Recovery calculation.

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:

Darian Dailey Darian Dailey

Title: Technical Director/Representative

Date: 03/10/23

ORGANICS

SEMIVOLATILES

Project Name: 2303-00659

Lab Number: L2311706

Project Number: 2303-00659

Report Date: 03/10/23

SAMPLE RESULTS

Lab ID: L2311706-01
 Client ID: 2303-00659-004
 Sample Location: Not Specified

Date Collected: 03/06/23 11:32
 Date Received: 03/07/23
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 133,537.1
 Analytical Date: 03/09/23 17:25
 Analyst: TBR

Extraction Method: EPA 537.1
 Extraction Date: 03/09/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	0.905	JZ	ng/l	2.00	0.581	1
Perfluorohexanoic Acid (PFHxA)	2.96		ng/l	2.00	0.581	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.581	1
Perfluoroheptanoic Acid (PFHpA)	1.81	JZ	ng/l	2.00	0.581	1
Perfluorohexanesulfonic Acid (PFHxS)	1.11	JZ	ng/l	2.00	0.581	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.581	1
Perfluorooctanoic Acid (PFOA)	5.22		ng/l	2.00	0.581	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.581	1
Perfluorooctanesulfonic Acid (PFOS)	1.08	JZ	ng/l	2.00	0.581	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.581	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.581	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.581	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.581	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.581	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.581	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.581	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.581	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.581	1
PFAS, Total (6)	5.22		ng/l	2.00	0.581	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	88		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	89		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91		70-130

Project Name: 2303-00659

Lab Number: L2311706

Project Number: 2303-00659

Report Date: 03/10/23

SAMPLE RESULTS

Lab ID: L2311706-02
 Client ID: 2303-00659-004 FB
 Sample Location: Not Specified

Date Collected: 03/06/23 11:32
 Date Received: 03/07/23
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 133,537.1
 Analytical Date: 03/09/23 17:42
 Analyst: TBR

Extraction Method: EPA 537.1
 Extraction Date: 03/09/23 10:45

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	0.627	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.627	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.627	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.627	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.627	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.627	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.627	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.627	1
Perfluorooctanesulfonic Acid (PFOS)	0.638	J	ng/l	2.00	0.627	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.627	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.627	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.627	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.627	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.627	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.627	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.627	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.627	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.627	1
PFAS, Total (6)	ND		ng/l	2.00	0.627	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	97		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	99		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	92		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91		70-130

Project Name: 2303-00659
Project Number: 2303-00659

Lab Number: L2311706
Report Date: 03/10/23

Method Blank Analysis Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 03/09/23 16:50
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 03/09/23 10:45

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-02 Batch: WG1752778-1					
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)	92		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	75		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 2303-00659

Lab Number: L2311706

Project Number: 2303-00659

Report Date: 03/10/23

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1752778-2								
Perfluorobutanesulfonic Acid (PFBS)	108		-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	118		-		50-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	104		-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	114		-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	98		-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	127		-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	110		-		50-150	-		30
Perfluorononanoic Acid (PFNA)	108		-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	114		-		50-150	-		30
Perfluorodecanoic Acid (PFDA)	94		-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	96		-		50-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	86		-		50-150	-		30
Perfluoroundecanoic Acid (PFUnA)	98		-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	94		-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	94		-		50-150	-		30
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	91		-		50-150	-		30
Perfluorotridecanoic Acid (PFTrDA)	116		-		50-150	-		30
Perfluorotetradecanoic Acid (PFTA)	112		-		50-150	-		30

Lab Control Sample Analysis Batch Quality Control

Project Name: 2303-00659
Project Number: 2303-00659

Lab Number: L2311706
Report Date: 03/10/23

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: WG1752778-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	97				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	98				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	85				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85				70-130



Matrix Spike Analysis

Batch Quality Control

Project Name: 2303-00659

Project Number: 2303-00659

Lab Number: L2311706

Report Date: 03/10/23

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: WG1752778-3 QC Sample: L2311706-01 Client ID: 2303-00659-004												
Perfluorobutanesulfonic Acid (PFBS)	0.905JZ	1.54	2.53	165	Q	-	-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	2.96	1.73	4.88	111		-	-		50-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	1.73	1.87J	108		-	-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	1.81JZ	1.73	3.71	214	Q	-	-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	1.11JZ	1.58	2.74	173	Q	-	-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	1.64	2.11	129		-	-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	5.22	1.73	7.17	113		-	-		50-150	-		30
Perfluorononanoic Acid (PFNA)	ND	1.73	2.08	120		-	-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	1.08JZ	1.61	2.91	181	Q	-	-		50-150	-		30
Perfluorodecanoic Acid (PFDA)	ND	1.73	1.77J	102		-	-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	1.62	1.70J	105		-	-		50-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.73	1.59J	92		-	-		50-150	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	1.73	1.66J	96		-	-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.73	1.59J	92		-	-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	ND	1.73	1.66J	96		-	-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	1.63	1.59J	97		-	-		50-150	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	1.73	2.08	120		-	-		50-150	-		30
Perfluorotetradecanoic Acid (PFTTA)	ND	1.73	2.01	116		-	-		50-150	-		30

Matrix Spike Analysis Batch Quality Control

Project Name: 2303-00659
Project Number: 2303-00659

Lab Number: L2311706
Report Date: 03/10/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
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Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1752778-3 QC Sample: L2311706-01 Client ID: 2303-00659-004

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	88				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	91				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	91				70-130

Lab Duplicate Analysis

Batch Quality Control

Project Name: 2303-00659

Project Number: 2303-00659

Lab Number: L2311706

Report Date: 03/10/23

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: WG1752778-4 QC Sample: L2311811-01 Client ID: DUP Sample						
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		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)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		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)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	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: 2303-00659

Project Number: 2303-00659

Lab Number: L2311706

Report Date: 03/10/23

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: WG1752778-4 QC Sample: L2311811-01 Client ID: DUP Sample						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	86		99		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	82		95		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	71		80		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		83		70-130



Project Name: 2303-00659

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Serial_No:03102314:47

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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(*)
L2311706-01A	Plastic 250ml Trizma preserved	A	NA		2.8	Y	Absent		A2-MA-537.1(14)
L2311706-01B	Plastic 250ml Trizma preserved	A	NA		2.8	Y	Absent		A2-MA-537.1(14)
L2311706-02A	Plastic 250ml Trizma preserved	A	NA		2.8	Y	Absent		A2-MA-537.1(14)

Project Name: 2303-00659

Project Number: 2303-00659

Serial_No:03102314:47
Lab Number: L2311706

Report Date: 03/10/23

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
Perfluoronanesulfonic 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: 2303-00659
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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: 2303-00659
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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.

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



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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.)

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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.

pc
8 3/7/23

Serial No:03102314:47
L2311706

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

Chain of Custody

Client/Project Name: 2303-00659
Sampled by: Client

Laboratory Number: _____

Sample #	Date	Time	Grab[G] or Composite[C]	Location	Container (Glass) (Plastic) (Sterile) (VOC)	Preservative	Test Requirements										Comments	
							EPA 537.1	18 Compounds										
-01 1	3/6/2023	11:32	G	2303-00659-004	2 - 250mL P	10	X	X										Drinking Water
-02 2	3/6/2023	11:32	G	2303-00659-004FB	1 - 250mL P	10												
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Preservative: 1-Hydrochloric Acid, 2- Ice, 3-Nitric Acid, 4-None, 5-Sodium Hydroxide, 6-Sulfuric Acid, 7-Thiosulfate, 8-Filter Sterilized, 9-Ammonium Chloride
10 - Trizma

Special Notes/Requirements

- IF THIS BOX IS CHECKED, MCL EXCEEDANCES MUST BE REPORTED IMMEDIATELY. THANK YOU.
- IF THIS BOX IS CHECKED, PLEASE RUN FIELD BLANK (S) IF DETECTS.

Relinquished by:	Date	Time	Received by:
	3/7/23	11:34	AAL 3/7/23 11:34
AAL	3/7/23	12:40	3/7/23 12:40
	3/7/23	15:00	Eric Curran 3/7/23 1500
Eric Curran	3/7/23	1550	3/7/23 1550
5.			