day
DAY ENVIRONMENTAL, INC.

ENVIRONMENTAL CONSULTANTS
AN AFFILIATE OF DAY ENGINEERING, P.C.

MONTHLY PROGRESS REPORT

DATE ISSUED: December 9, 2023
PERIOD COVERED: November 2023
SITE NO.: C828213
SITE NAME: 1560 Lake Avenue Site
SITE ADDRESS: 1560 Lake Avenue
CITY: Rochester
COUNTY: Monroe

ACTIONS PERFORMED DURING REPORTING PERIOD:

Remedial Investigation/Remedial Alternatives Analysis (RI/RAA)

None.

Interim Site Management Plan (ISMP)

None.

Interim Remedial Measures (IRMs)

Continued a second phase of fieldwork associated with the In-Situ Bioremediation Oxygen Injection System IRM. Through the end of November 2023, the following work has been completed: horizontal piping, junction boxes, vertical injection points, and electrical service are installed; horizontal piping is connected to vertical injection points and curb boxes were installed over these connections.

Other

None.

ANTICIPATED ACTIONS FOR THE NEXT REPORTING PERIOD:

RI/RAA

Continue working on RI/RAA Report components as outlined in Section 5.0 of the December 2019 RI/RAA Work Plan.

Interim Site Management Plan (ISMP)

None.

IRMs

Continue fieldwork associated with the In-Situ Bioremediation Oxygen Injection System IRM. This includes City inspection of, and RG&E connection to, the recently-installed electric panel and wiring, and set up and connection of the two oxygen injection system trailers. It is anticipated that start up may occur in late December 2023 or in January 2024.

Commence the final phase of fieldwork associated with the Cover System IRM. This includes placement demarcation layer and crusher run #2 over areas that were left open until the oxygen injection system intrusive work was complete.

Other

None.

1563 LYELL AVENUE
ROCHESTER, NEW YORK 14606
(585) 454-0210
FAX (585) 454-0825
www.dayenvironmental.com

APPROVED ACTIVITY MODIFICATIONS (Change of Work Scope and/or Schedule)**:**

RI/RAA

None.

IRMs

None.

RESULTS OF SAMPLING OR DATA RECEIVED:

RI/RAA

None.

IRMs

The results for groundwater samples (numbered 090 through 103) that were received in November 2023 are attached. A draft figure showing cumulative well locations is also attached. These results are considered the baseline round of effectiveness monitorjng outlined in Section 4.0 of the January 2020 Interim Remedial Measure Work Plan for the In-Situ Bioremediation Oxygen Injection System.

% OF COMPLETION:

RI/RAA

The RI/RAA is 71% complete.

IRMs

The In-Situ Bioremediation Oxygen Injection System IRM is approximately 60% complete.

The Cover System IRM is approximately 75% complete.

UNRESOLVED DELAYS (Encountered or Anticipated)**:**

None.

EFFORTS MADE TO MITIGATE DELAYS:

None.

CITIZEN PARTICIPATION ACTIVITES (Completed and Anticipated)**:**

None.

Attachments: None.

Legend

N

- RI Overburden test boring advanced and converted to overburden monitoring well set to intersect water table
- RI Bedrock monitoring well
- Well could not be located
- Overburden monitoring well installed in November 2011, January 2012, or January 2018
- Bedrock monitoring well installed February 2018
- Bedrock well decommissioned by the City of Rochester
- Overburden monitoring well installed May 2018
- Histroical sewer corridor - 1910 Plat Map
- Former building footprint
- Site boundary
- Adjacent parcels

NOTES:

Locations of monitoring wells installed January 2017 and 2018 were provided by Stantec.
These locations are to be considered approximate.

Property boundaries provided by City of Rochester dated 2018.

Aerial imagery provided by the NYS GIS Clearinghouse, dated 2015. This image may not reflect the most recent site conditions.

DATE	05-2020
PROJECT MANAGER	JAD
DATE DRAWN	05-2020
DRAWN BY	CPS
DATE ISSUED	05-06-2020
SCALE	AS NOTED

DAY ENVIRONMENTAL, INC.
Environmental Consultants
Rochester, New York 14606
New York, New York 10170

Project Title
1560 LAKE AVENUE
ROCHESTER, NEW YORK
BROWNFIELD CLEANUP PROGRAM

Drawing Title
Site Plan with Cummulative Well Locations

Project No.
5721S-20

FIGURE 13

Last Date Saved: 05 Dec 2023 Document Path: E:\GIS Mapping\Brooks\5721S-20\ISM\P5721S-13 ISMP. Well Plan.mxd

ANALYTICAL REPORT

Lab Number:	L2368357
Client:	Day Environmental, Inc. 1563 Lyell Avenue Rochester, NY 14606
ATTN:	Jeff Danzinger
Phone:	(585) 454-0210
Project Name:	1560 LAKE AVENUE
Project Number:	5721S-20
Report Date:	11/28/23

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 1560 LAKE AVENUE
Project Number: 5721S-20

Lab Number: L2368357
Report Date: 11/28/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2368357-01	090-MW-102	WATER	ROCHESTER, NY	11/15/23 15:10	11/16/23
L2368357-02	091-MW-105	WATER	ROCHESTER, NY	11/15/23 14:00	11/16/23
L2368357-03	092-MW-107	WATER	ROCHESTER, NY	11/15/23 12:50	11/16/23
L2368357-04	093-MW-108	WATER	ROCHESTER, NY	11/15/23 14:30	11/16/23
L2368357-05	094-MW-3A	WATER	ROCHESTER, NY	11/16/23 11:00	11/16/23
L2368357-06	095-MW-6	WATER	ROCHESTER, NY	11/15/23 10:40	11/16/23
L2368357-07	096-MW-104	WATER	ROCHESTER, NY	11/16/23 10:05	11/16/23
L2368357-08	097-MW-126	WATER	ROCHESTER, NY	11/16/23 12:00	11/16/23
L2368357-09	098-MW-208	WATER	ROCHESTER, NY	11/15/23 11:40	11/16/23
L2368357-10	099-MW-209	WATER	ROCHESTER, NY	11/15/23 11:35	11/16/23
L2368357-11	100-MW-4	WATER	ROCHESTER, NY	11/15/23 10:13	11/16/23
L2368357-12	101-MW-LE-02	WATER	ROCHESTER, NY	11/16/23 12:05	11/16/23
L2368357-13	102-MW-LE-03	WATER	ROCHESTER, NY	11/16/23 11:05	11/16/23
L2368357-14	103-MW-LE-04	WATER	ROCHESTER, NY	11/16/23 10:15	11/16/23

Project Name:	1560 LAKE AVENUE	**Lab Number:**	L2368357
Project Number:	5721S-20	**Report Date:**	11/28/23

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:	1560 LAKE AVENUE	**Lab Number:**	L2368357
Project Number:	5721S-20	**Report Date:**	11/28/23

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: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 11/28/23

ORGANICS

VOLATILES

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-01 D
Client ID: 090-MW-102
Sample Location: ROCHESTER, NY

Date Collected: 11/15/23 15:10
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 15:53
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	2.8	4
1,1-Dichloroethane	ND		ug/l	10	2.8	4
Chloroform	ND		ug/l	10	2.8	4
Carbon tetrachloride	ND		ug/l	2.0	0.54	4
1,2-Dichloropropane	ND		ug/l	4.0	0.55	4
Dibromochloromethane	ND		ug/l	2.0	0.60	4
1,1,2-Trichloroethane	ND		ug/l	6.0	2.0	4
Tetrachloroethene	ND		ug/l	2.0	0.72	4
Chlorobenzene	ND		ug/l	10	2.8	4
Trichlorofluoromethane	ND		ug/l	10	2.8	4
1,2-Dichloroethane	ND		ug/l	2.0	0.53	4
1,1,1-Trichloroethane	ND		ug/l	10	2.8	4
Bromodichloromethane	ND		ug/l	2.0	0.77	4
trans-1,3-Dichloropropene	ND		ug/l	2.0	0.66	4
cis-1,3-Dichloropropene	ND		ug/l	2.0	0.58	4
Bromoform	ND		ug/l	8.0	2.6	4
1,1,2,2-Tetrachloroethane	ND		ug/l	2.0	0.67	4
Benzene	6.4		ug/l	2.0	0.64	4
Toluene	5.6	J	ug/l	10	2.8	4
Ethylbenzene	200		ug/l	10	2.8	4
Chloromethane	ND		ug/l	10	2.8	4
Bromomethane	ND		ug/l	10	2.8	4
Vinyl chloride	ND		ug/l	4.0	0.28	4
Chloroethane	ND		ug/l	10	2.8	4
1,1-Dichloroethene	ND		ug/l	2.0	0.68	4
trans-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Trichloroethene	ND		ug/l	2.0	0.70	4
1,2-Dichlorobenzene	ND		ug/l	10	2.8	4

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-01 D Date Collected: 11/15/23 15:10
Client ID: 090-MW-102 Date Received: 11/16/23
Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	10	2.8	4
1,4-Dichlorobenzene	ND		ug/l	10	2.8	4
Methyl tert butyl ether	ND		ug/l	10	2.8	4
p/m-Xylene	270		ug/l	10	2.8	4
o-Xylene	9.1	J	ug/l	10	2.8	4
cis-1,2-Dichloroethene	ND		ug/l	10	2.8	4
Styrene	ND		ug/l	10	2.8	4
Dichlorodifluoromethane	ND		ug/l	20	4.0	4
Acetone	ND		ug/l	20	5.8	4
Carbon disulfide	ND		ug/l	20	4.0	4
2-Butanone	ND		ug/l	20	7.8	4
4-Methyl-2-pentanone	ND		ug/l	20	4.0	4
2-Hexanone	ND		ug/l	20	4.0	4
1,2-Dibromoethane	ND		ug/l	8.0	2.6	4
n-Butylbenzene	39		ug/l	10	2.8	4
sec-Butylbenzene	21		ug/l	10	2.8	4
tert-Butylbenzene	ND		ug/l	10	2.8	4
1,2-Dibromo-3-chloropropane	ND		ug/l	10	2.8	4
Isopropylbenzene	120		ug/l	10	2.8	4
p-Isopropyltoluene	4.8	J	ug/l	10	2.8	4
Naphthalene	65		ug/l	10	2.8	4
n-Propylbenzene	430		ug/l	10	2.8	4
1,2,4-Trichlorobenzene	ND		ug/l	10	2.8	4
1,3,5-Trimethylbenzene	68		ug/l	10	2.8	4
1,2,4-Trimethylbenzene	220		ug/l	10	2.8	4
Methyl Acetate	ND		ug/l	8.0	0.94	4
Cyclohexane	94		ug/l	40	1.1	4
Freon-113	ND		ug/l	10	2.8	4
Methyl cyclohexane	120		ug/l	40	1.6	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	85		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-02 D
Client ID: 091-MW-105
Sample Location: ROCHESTER, NY

Date Collected: 11/15/23 14:00
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 16:18
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	ND		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	5.3		ug/l	5.0	1.6	10
Toluene	ND		ug/l	25	7.0	10
Ethylbenzene	1700		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	ND		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	ND		ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	ND		ug/l	25	7.0	10
Trichloroethene	ND		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-02 D Date Collected: 11/15/23 14:00
Client ID: 091-MW-105 Date Received: 11/16/23
Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	7.0	10
p/m-Xylene	440		ug/l	25	7.0	10
o-Xylene	28		ug/l	25	7.0	10
cis-1,2-Dichloroethene	ND		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
n-Butylbenzene	28		ug/l	25	7.0	10
sec-Butylbenzene	16	J	ug/l	25	7.0	10
tert-Butylbenzene	ND		ug/l	25	7.0	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	160		ug/l	25	7.0	10
p-Isopropyltoluene	ND		ug/l	25	7.0	10
Naphthalene	270		ug/l	25	7.0	10
n-Propylbenzene	460		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
1,3,5-Trimethylbenzene	46		ug/l	25	7.0	10
1,2,4-Trimethylbenzene	150		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	120		ug/l	100	2.7	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	94	J	ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	89		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-03 D
Client ID: 092-MW-107
Sample Location: ROCHESTER, NY

Date Collected: 11/15/23 12:50
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 16:43
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	62	18.	25
1,1-Dichloroethane	ND		ug/l	62	18.	25
Chloroform	ND		ug/l	62	18.	25
Carbon tetrachloride	ND		ug/l	12	3.4	25
1,2-Dichloropropane	ND		ug/l	25	3.4	25
Dibromochloromethane	ND		ug/l	12	3.7	25
1,1,2-Trichloroethane	ND		ug/l	38	12.	25
Tetrachloroethene	ND		ug/l	12	4.5	25
Chlorobenzene	ND		ug/l	62	18.	25
Trichlorofluoromethane	ND		ug/l	62	18.	25
1,2-Dichloroethane	ND		ug/l	12	3.3	25
1,1,1-Trichloroethane	ND		ug/l	62	18.	25
Bromodichloromethane	ND		ug/l	12	4.8	25
trans-1,3-Dichloropropene	ND		ug/l	12	4.1	25
cis-1,3-Dichloropropene	ND		ug/l	12	3.6	25
Bromoform	ND		ug/l	50	16.	25
1,1,2,2-Tetrachloroethane	ND		ug/l	12	4.2	25
Benzene	ND		ug/l	12	4.0	25
Toluene	59	J	ug/l	62	18.	25
Ethylbenzene	1600		ug/l	62	18.	25
Chloromethane	ND		ug/l	62	18.	25
Bromomethane	ND		ug/l	62	18.	25
Vinyl chloride	ND		ug/l	25	1.8	25
Chloroethane	ND		ug/l	62	18.	25
1,1-Dichloroethene	ND		ug/l	12	4.2	25
trans-1,2-Dichloroethene	ND		ug/l	62	18.	25
Trichloroethene	ND		ug/l	12	4.4	25
1,2-Dichlorobenzene	ND		ug/l	62	18.	25

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-03 D Date Collected: 11/15/23 12:50
Client ID: 092-MW-107 Date Received: 11/16/23
Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	62	18.	25
1,4-Dichlorobenzene	ND		ug/l	62	18.	25
Methyl tert butyl ether	ND		ug/l	62	18.	25
p/m-Xylene	5100		ug/l	62	18.	25
o-Xylene	1400		ug/l	62	18.	25
cis-1,2-Dichloroethene	ND		ug/l	62	18.	25
Styrene	ND		ug/l	62	18.	25
Dichlorodifluoromethane	ND		ug/l	120	25.	25
Acetone	ND		ug/l	120	36.	25
Carbon disulfide	ND		ug/l	120	25.	25
2-Butanone	ND		ug/l	120	48.	25
4-Methyl-2-pentanone	ND		ug/l	120	25.	25
2-Hexanone	ND		ug/l	120	25.	25
1,2-Dibromoethane	ND		ug/l	50	16.	25
n-Butylbenzene	22	J	ug/l	62	18.	25
sec-Butylbenzene	ND		ug/l	62	18.	25
tert-Butylbenzene	ND		ug/l	62	18.	25
1,2-Dibromo-3-chloropropane	ND		ug/l	62	18.	25
Isopropylbenzene	180		ug/l	62	18.	25
p-Isopropyltoluene	ND		ug/l	62	18.	25
Naphthalene	590		ug/l	62	18.	25
n-Propylbenzene	510		ug/l	62	18.	25
1,2,4-Trichlorobenzene	ND		ug/l	62	18.	25
1,3,5-Trimethylbenzene	880		ug/l	62	18.	25
1,2,4-Trimethylbenzene	3800		ug/l	62	18.	25
Methyl Acetate	ND		ug/l	50	5.8	25
Cyclohexane	110	J	ug/l	250	6.8	25
Freon-113	ND		ug/l	62	18.	25
Methyl cyclohexane	130	J	ug/l	250	9.9	25

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	94		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-04 Date Collected: 11/15/23 14:30
Client ID: 093-MW-108 Date Received: 11/16/23
Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 12:37
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.52		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	72		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-04 Date Collected: 11/15/23 14:30

Client ID: 093-MW-108 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	7.1		ug/l	2.5	0.70	1
p/m-Xylene	88		ug/l	2.5	0.70	1
o-Xylene	18		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	1.4	J	ug/l	2.5	0.70	1
sec-Butylbenzene	1.8	J	ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	11		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	12		ug/l	2.5	0.70	1
n-Propylbenzene	20		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	8.6		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	83		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	2.9	J	ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	2.1	J	ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-05
Client ID: 094-MW-3A
Sample Location: ROCHESTER, NY

Date Collected: 11/16/23 11:00
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 13:01
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	56		ug/l	0.50	0.16	1
Toluene	8.7		ug/l	2.5	0.70	1
Ethylbenzene	150		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	3.6		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-05 Date Collected: 11/16/23 11:00

Client ID: 094-MW-3A Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	1.5	J	ug/l	2.5	0.70	1
Methyl tert butyl ether	0.70	J	ug/l	2.5	0.70	1
p/m-Xylene	53		ug/l	2.5	0.70	1
o-Xylene	24		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	2.5		ug/l	2.5	0.70	1
sec-Butylbenzene	2.1	J	ug/l	2.5	0.70	1
tert-Butylbenzene	0.99	J	ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	35		ug/l	2.5	0.70	1
p-Isopropyltoluene	1.0	J	ug/l	2.5	0.70	1
Naphthalene	23		ug/l	2.5	0.70	1
n-Propylbenzene	76		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	24		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	92		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	22		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	9.2	J	ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	84		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-06
Client ID: 095-MW-6
Sample Location: ROCHESTER, NY
Date Collected: 11/15/23 10:40
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 13:26
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-06 Date Collected: 11/15/23 10:40

Client ID: 095-MW-6 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	51		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.0	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

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

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-07
Client ID: 096-MW-104
Sample Location: ROCHESTER, NY

Date Collected: 11/16/23 10:05
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 13:51
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	0.23	J	ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	61		ug/l	0.50	0.16	1
Toluene	4.2		ug/l	2.5	0.70	1
Ethylbenzene	87		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-07 Date Collected: 11/16/23 10:05

Client ID: 096-MW-104 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	0.84	J	ug/l	2.5	0.70	1
p/m-Xylene	17		ug/l	2.5	0.70	1
o-Xylene	1.8	J	ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	3.9	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	2.0	J	ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	4.0		ug/l	2.5	0.70	1
n-Propylbenzene	2.6		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	0.97	J	ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	1.5	J	ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-08
Client ID: 097-MW-126
Sample Location: ROCHESTER, NY
Date Collected: 11/16/23 12:00
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 14:15
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.85		ug/l	0.50	0.16	1
Toluene	1.3	J	ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	0.80	J	ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-08 Date Collected: 11/16/23 12:00

Client ID: 097-MW-126 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	3.7		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	4.5		ug/l	2.5	0.70	1
sec-Butylbenzene	7.6		ug/l	2.5	0.70	1
tert-Butylbenzene	0.85	J	ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	18		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	28		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	9.7	J	ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	6.6	J	ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	88		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-09 D
Client ID: 098-MW-208
Sample Location: ROCHESTER, NY

Date Collected: 11/15/23 11:40
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 17:07
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	25	7.0	10
1,1-Dichloroethane	ND		ug/l	25	7.0	10
Chloroform	ND		ug/l	25	7.0	10
Carbon tetrachloride	ND		ug/l	5.0	1.3	10
1,2-Dichloropropane	ND		ug/l	10	1.4	10
Dibromochloromethane	ND		ug/l	5.0	1.5	10
1,1,2-Trichloroethane	ND		ug/l	15	5.0	10
Tetrachloroethene	ND		ug/l	5.0	1.8	10
Chlorobenzene	ND		ug/l	25	7.0	10
Trichlorofluoromethane	ND		ug/l	25	7.0	10
1,2-Dichloroethane	ND		ug/l	5.0	1.3	10
1,1,1-Trichloroethane	ND		ug/l	25	7.0	10
Bromodichloromethane	ND		ug/l	5.0	1.9	10
trans-1,3-Dichloropropene	ND		ug/l	5.0	1.6	10
cis-1,3-Dichloropropene	ND		ug/l	5.0	1.4	10
Bromoform	ND		ug/l	20	6.5	10
1,1,2,2-Tetrachloroethane	ND		ug/l	5.0	1.7	10
Benzene	310		ug/l	5.0	1.6	10
Toluene	26		ug/l	25	7.0	10
Ethylbenzene	1600		ug/l	25	7.0	10
Chloromethane	ND		ug/l	25	7.0	10
Bromomethane	ND		ug/l	25	7.0	10
Vinyl chloride	ND		ug/l	10	0.71	10
Chloroethane	ND		ug/l	25	7.0	10
1,1-Dichloroethene	ND		ug/l	5.0	1.7	10
trans-1,2-Dichloroethene	ND		ug/l	25	7.0	10
Trichloroethene	ND		ug/l	5.0	1.8	10
1,2-Dichlorobenzene	ND		ug/l	25	7.0	10

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-09 D Date Collected: 11/15/23 11:40
Client ID: 098-MW-208 Date Received: 11/16/23
Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	25	7.0	10
1,4-Dichlorobenzene	ND		ug/l	25	7.0	10
Methyl tert butyl ether	ND		ug/l	25	7.0	10
p/m-Xylene	480		ug/l	25	7.0	10
o-Xylene	10	J	ug/l	25	7.0	10
cis-1,2-Dichloroethene	ND		ug/l	25	7.0	10
Styrene	ND		ug/l	25	7.0	10
Dichlorodifluoromethane	ND		ug/l	50	10.	10
Acetone	ND		ug/l	50	15.	10
Carbon disulfide	ND		ug/l	50	10.	10
2-Butanone	ND		ug/l	50	19.	10
4-Methyl-2-pentanone	ND		ug/l	50	10.	10
2-Hexanone	ND		ug/l	50	10.	10
1,2-Dibromoethane	ND		ug/l	20	6.5	10
n-Butylbenzene	14	J	ug/l	25	7.0	10
sec-Butylbenzene	9.9	J	ug/l	25	7.0	10
tert-Butylbenzene	ND		ug/l	25	7.0	10
1,2-Dibromo-3-chloropropane	ND		ug/l	25	7.0	10
Isopropylbenzene	130		ug/l	25	7.0	10
p-Isopropyltoluene	ND		ug/l	25	7.0	10
Naphthalene	500		ug/l	25	7.0	10
n-Propylbenzene	310		ug/l	25	7.0	10
1,2,4-Trichlorobenzene	ND		ug/l	25	7.0	10
1,3,5-Trimethylbenzene	260		ug/l	25	7.0	10
1,2,4-Trimethylbenzene	800		ug/l	25	7.0	10
Methyl Acetate	ND		ug/l	20	2.3	10
Cyclohexane	79	J	ug/l	100	2.7	10
Freon-113	ND		ug/l	25	7.0	10
Methyl cyclohexane	52	J	ug/l	100	4.0	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	91		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-10
Client ID: 099-MW-209
Sample Location: ROCHESTER, NY
Date Collected: 11/15/23 11:35
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 14:40
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-10 Date Collected: 11/15/23 11:35

Client ID: 099-MW-209 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	10		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	1.5	J	ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	2.6		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	97		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-11
Client ID: 100-MW-4
Sample Location: ROCHESTER, NY
Date Collected: 11/15/23 10:13
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 15:04
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-11 Date Collected: 11/15/23 10:13

Client ID: 100-MW-4 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-12
Client ID: 101-MW-LE-02
Sample Location: ROCHESTER, NY
Date Collected: 11/16/23 12:05
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/23/23 15:29
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-12 Date Collected: 11/16/23 12:05

Client ID: 101-MW-LE-02 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	12		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	0.60	J	ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-13
Client ID: 102-MW-LE-03
Sample Location: ROCHESTER, NY
Date Collected: 11/16/23 11:05
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/26/23 04:34
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-13 Date Collected: 11/16/23 11:05

Client ID: 102-MW-LE-03 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	9.4		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	103		70-130

Project Name: 1560 LAKE AVENUE
Lab Number: L2368357
Project Number: 5721S-20
Report Date: 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-14
Client ID: 103-MW-LE-04
Sample Location: ROCHESTER, NY

Date Collected: 11/16/23 10:15
Date Received: 11/16/23
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 11/26/23 05:00
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

SAMPLE RESULTS

Lab ID: L2368357-14 Date Collected: 11/16/23 10:15

Client ID: 103-MW-LE-04 Date Received: 11/16/23

Sample Location: ROCHESTER, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	8.5		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	103		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/23/23 08:56
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-12 Batch: WG1856170-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/23/23 08:56
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-12 Batch: WG1856170-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/23/23 08:56
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-12 Batch: WG1856170-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	102		70-130

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/25/23 22:03
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-14 Batch: WG1856594-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/25/23 22:03
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-14 Batch: WG1856594-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: 1560 LAKE AVENUE **Lab Number:** L2368357

Project Number: 5721S-20 **Report Date:** 11/28/23

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 11/25/23 22:03
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 13-14 Batch: WG1856594-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1560 LAKE AVENUE

Project Number: 5721S-20

Lab Number: L2368357

Report Date: 11/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-12 Batch: WG1856170-3 WG1856170-4								
Methylene chloride	130		110		70-130	17		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		100		63-132	0		20
1,2-Dichloropropane	98		100		70-130	2		20
Dibromochloromethane	83		90		63-130	8		20
1,1,2-Trichloroethane	92		98		70-130	6		20
Tetrachloroethene	100		96		70-130	4		20
Chlorobenzene	110		100		75-130	10		20
Trichlorofluoromethane	110		100		62-150	10		20
1,2-Dichloroethane	93		100		70-130	7		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	91		99		67-130	8		20
trans-1,3-Dichloropropene	96		100		70-130	4		20
cis-1,3-Dichloropropene	99		100		70-130	1		20
Bromoform	85		88		54-136	3		20
1,1,2,2-Tetrachloroethane	100		110		67-130	10		20
Benzene	100		100		70-130	0		20
Toluene	110		100		70-130	10		20
Ethylbenzene	110		100		70-130	10		20
Chloromethane	130		110		64-130	17		20
Bromomethane	130		110		39-139	17		20
Vinyl chloride	120		100		55-140	18		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1560 LAKE AVENUE

Project Number: 5721S-20

Lab Number: L2368357

Report Date: 11/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-12 Batch: WG1856170-3 WG1856170-4								
Chloroethane	130		110		55-138	17		20
1,1-Dichloroethene	110		100		61-145	10		20
trans-1,2-Dichloroethene	100		110		70-130	10		20
Trichloroethene	93		90		70-130	3		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		99		70-130	1		20
Methyl tert butyl ether	94		100		63-130	6		20
p/m-Xylene	115		105		70-130	9		20
o-Xylene	110		105		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Styrene	120		110		70-130	9		20
Dichlorodifluoromethane	100		91		36-147	9		20
Acetone	91		91		58-148	0		20
Carbon disulfide	120		100		51-130	18		20
2-Butanone	92		98		63-138	6		20
4-Methyl-2-pentanone	81		91		59-130	12		20
2-Hexanone	79		91		57-130	14		20
1,2-Dibromoethane	88		94		70-130	7		20
n-Butylbenzene	110		100		53-136	10		20
sec-Butylbenzene	110		100		70-130	10		20
tert-Butylbenzene	100		99		70-130	1		20
1,2-Dibromo-3-chloropropane	93		96		41-144	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1560 LAKE AVENUE

Project Number: 5721S-20

Lab Number: L2368357

Report Date: 11/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-12 Batch: WG1856170-3 WG1856170-4								
Isopropylbenzene	110		100		70-130	10		20
p-Isopropyltoluene	110		100		70-130	10		20
Naphthalene	100		100		70-130	0		20
n-Propylbenzene	100		100		69-130	0		20
1,2,4-Trichlorobenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,2,4-Trimethylbenzene	110		100		70-130	10		20
Methyl Acetate	90		96		70-130	6		20
Cyclohexane	98		95		70-130	3		20
Freon-113	99		97		70-130	2		20
Methyl cyclohexane	98		92		70-130	6		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		97		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	102		102		70-130
Dibromofluoromethane	101		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1560 LAKE AVENUE

Project Number: 5721S-20

Lab Number: L2368357

Report Date: 11/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-14 Batch: WG1856594-3 WG1856594-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	98		94		63-132	4		20
1,2-Dichloropropane	110		100		70-130	10		20
Dibromochloromethane	100		98		63-130	2		20
1,1,2-Trichloroethane	110		100		70-130	10		20
Tetrachloroethene	98		93		70-130	5		20
Chlorobenzene	100		100		75-130	0		20
Trichlorofluoromethane	100		98		62-150	2		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	99		95		67-130	4		20
Bromodichloromethane	100		98		67-130	2		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
Bromoform	98		95		54-136	3		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	110		110		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	100		98		70-130	2		20
Chloromethane	100		100		64-130	0		20
Bromomethane	91		120		39-139	**27**	Q	20
Vinyl chloride	100		110		55-140	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1560 LAKE AVENUE

Project Number: 5721S-20

Lab Number: L2368357

Report Date: 11/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-14 Batch: WG1856594-3 WG1856594-4								
Chloroethane	120		120		55-138	0		20
1,1-Dichloroethene	110		110		61-145	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	110		100		70-130	10		20
1,2-Dichlorobenzene	99		96		70-130	3		20
1,3-Dichlorobenzene	99		96		70-130	3		20
1,4-Dichlorobenzene	97		94		70-130	3		20
Methyl tert butyl ether	97		96		63-130	1		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	105		100		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	85		88		36-147	3		20
Acetone	110		110		58-148	0		20
Carbon disulfide	110		110		51-130	0		20
2-Butanone	94		100		63-138	6		20
4-Methyl-2-pentanone	93		92		59-130	1		20
2-Hexanone	89		90		57-130	1		20
1,2-Dibromoethane	100		100		70-130	0		20
n-Butylbenzene	97		92		53-136	5		20
sec-Butylbenzene	96		91		70-130	5		20
tert-Butylbenzene	95		90		70-130	5		20
1,2-Dibromo-3-chloropropane	88		92		41-144	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1560 LAKE AVENUE
Project Number: 5721S-20

Lab Number: L2368357
Report Date: 11/28/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 13-14 Batch: WG1856594-3 WG1856594-4								
Isopropylbenzene	97		92		70-130	5		20
p-Isopropyltoluene	94		90		70-130	4		20
Naphthalene	80		81		70-130	1		20
n-Propylbenzene	99		94		69-130	5		20
1,2,4-Trichlorobenzene	86		86		70-130	0		20
1,3,5-Trimethylbenzene	99		94		64-130	5		20
1,2,4-Trimethylbenzene	99		95		70-130	4		20
Methyl Acetate	110		100		70-130	10		20
Cyclohexane	98		93		70-130	5		20
Freon-113	110		100		70-130	10		20
Methyl cyclohexane	94		89		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		98		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	99		99		70-130
Dibromofluoromethane	100		99		70-130

Project Name: 1560 LAKE AVENUE
Project Number: 5721S-20

Lab Number: L2368357
Report Date: 11/28/23

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(*)
L2368357-01A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-01B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-01C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-02A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-02B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-02C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-03A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-03B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-03C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-04A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-04B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-04C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-05A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-05B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-05C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-06A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-06B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-06C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-07A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-07B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-07C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-08A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-08B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: 1560 LAKE AVENUE
Project Number: 5721S-20

Lab Number: L2368357
Report Date: 11/28/23

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2368357-08C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-09A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-09B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-09C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-10A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-10B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-10C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-11A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-11B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-11C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-12A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-12B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-12C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-13A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-13B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-13C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-14A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-14B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L2368357-14C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	1560 LAKE AVENUE	**Lab Number:**	L2368357
Project Number:	5721S-20	**Report Date:**	11/28/23

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:	1560 LAKE AVENUE	**Lab Number:**	L2368357
Project Number:	5721S-20	**Report Date:**	11/28/23

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:	1560 LAKE AVENUE	**Lab Number:**	L2368357
Project Number:	5721S-20	**Report Date:**	11/28/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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.)

Project Name:	1560 LAKE AVENUE	**Lab Number:**	L2368357
Project Number:	5721S-20	**Report Date:**	11/28/23

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 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 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 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 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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

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

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

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

Page 1 of 2

Date Rec'd in Lab: 11/17/23

ALPHA Job #: L2368357

Client Information

Client: Day Environmental, Inc.
Address: 1563 Lyell Avenue, Rochester, NY 14606
Phone: 585-454-0210
Fax: —
Email: jRenzinger@dayenvint.com

Project Information

Project Name: 1560 Lake Avenue
Project Location: Rochester, NY
Project #: 57215-20
(Use Project name as Project #): ☐
Project Manager: Jeff Renzinger
ALPHAQuote #: 9900

Turn-Around Time

Standard: ☒ Due Date:
Rush (only if pre approved): ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B PDF
☐ EQuIS (1 File) ☒ EQuIS (4 File) NYSDEC EQuIS EXCEL
☐ Other

Billing Information

☒ Same as Client Info
PO # 57215-20

Regulatory Requirement

☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility: ☐ NJ ☒ NY ☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

TCL + CP-51 VOCs B&D

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL + CP-51 VOCs B&D	Sample Specific Comments	Total # Bottles
68357-01	090-MW-102	11/15	1510	GW	CD	X		3
-02	091-MW-104	11/15	1400		CD	X		3
-03	092-MW-107	11/15	1250		CD	X		3
-04	093-MW-108	11/15	1430		HB	X		3
-05	094-MW-3A	11/16	1100		HB	X		3
-06	095-MW-6	11/15	1040		CD	X		3
-07	096-MW-104	11/16	1005		HB	X		3
-08	097-MW-126	11/16	1200		HB	X		3
-09	098-MW-208	11/15	1140		CD	X		3
-10	099-MW-209	11/15	1135		HB	X		3

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

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

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

Container Type	V										
Preservative	B										

Relinquished By:	Date/Time	Received By:	Date/Time
	11-16 / 1530	SECURE STORAGE AAL	11/16/23 17:30
SECURE STORAGE AAL	11/16/23 17:30	W MOT AAL	11/16/23 17:30
W MOT AAL	11/16/23 17:30		11/17/23 0220

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

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

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

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

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

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

Page 2 of 2

Date Rec'd in Lab: 11/17/23

ALPHA Job #: L2368357

Client Information

Client: Day Environmental, Inc.
Address: 1563 Lyell Avenue
Rochester, NY 14606
Phone: 585-454-0210
Fax: —
Email: jdanzinger@dayenvironmental.com

Project Information

Project Name: 1560 Lake Avenue
Project Location: Rochester, NY
Project #: 5721S-20
(Use Project name as Project #) ☐
Project Manager: Jeff Danzinger
ALPHAQuote #: 9900

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B PDF
☐ EQuIS (1 File) ☒ EQuIS (4 File) NYSDEC EQUIS EXCEL
☐ Other

Billing Information

☒ Same as Client Info
PO # 5721S-20

Regulatory Requirement

☒ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☒ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

TCL + CP-51 VOCs 624D

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL + CP-51 VOCs 624D	Sample Specific Comments	Total Bottle
68357-11	100-MW-4	11/15	1013	GW	HB	X		3
-12	101-MW-LE-02	11/16	1205	↓	CD	X		3
-13	102-MW-LE-03	11/16	1105	↓	CD	X		3
-14	103-MW-LE-04	11/16	1015	↓	CD	X		3

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

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

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

Container Type	V											
Preservative	B											

Relinquished By:	Date/Time	Received By:	Date/Time
	11/16/1530	SECURE STORAGE AAL	11/16/23 17:30
SECURE STORAGE AAL	11/16/23 17:30	W MOT AAL	11/16/23 17:30
W MOT AAL	11/16/23 17:30		11/17/23 0220

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

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

10515 Research Drive
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SITE LOGIC Report

QuantArray®-Petro Study

Contact: Jeffrey Danzinger
Phone: 585.454.0210
Address: Day Environmental Inc
1563 Lyell Ave
Rochester, NY 14606
Email: jdanzinger@daymail.net

MI Identifier: 073UK

Report Date: 11/30/2023

Project: 1560 Lake Avenue, 5721S-20
Comments:

The QuantArray®-Petro Approach

Comprehensive evaluation of biodegradation potential at petroleum impacted sites is inherently problematic due to two factors:

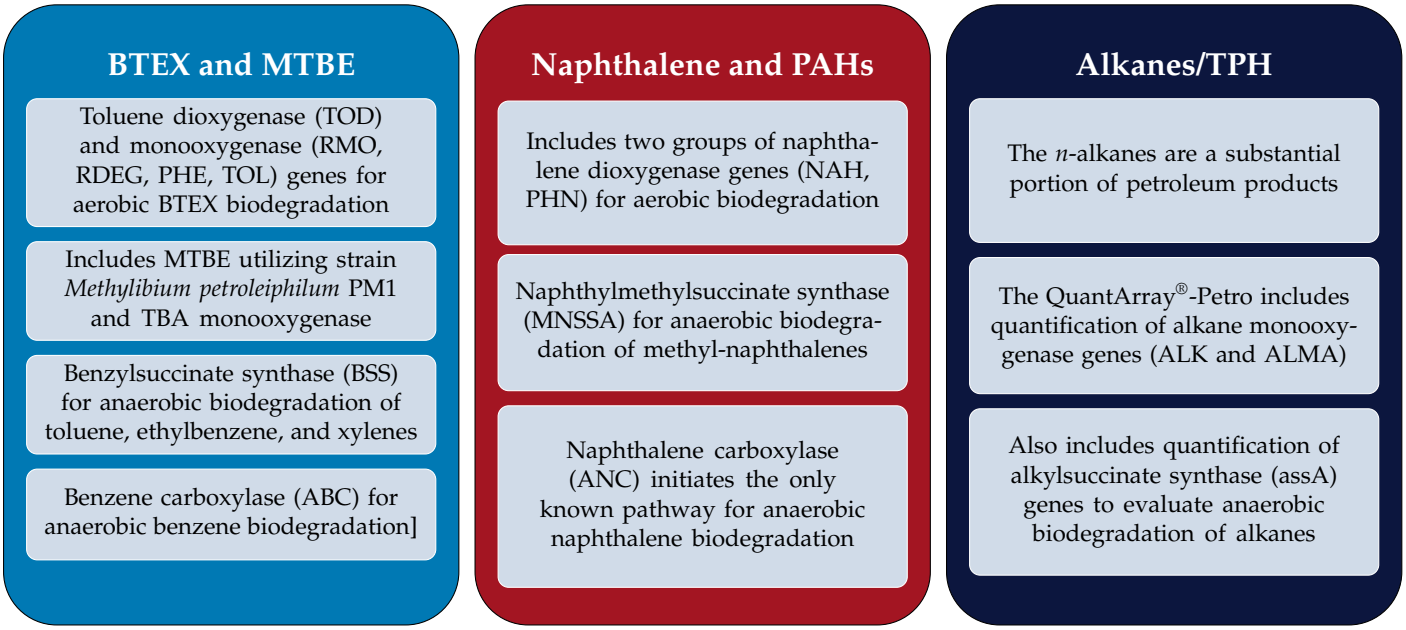
(1) Petroleum products are complex mixtures of hundreds of aliphatic, aromatic, cyclic, and heterocyclic compounds.

(2) Even for common classes of contaminants like benzene, toluene, ethylbenzene, and xylenes (BTEX), biodegradation can proceed by a multitude of pathways.

The QuantArray®-Petro has been designed to address both of these issues by providing the simultaneous quantification of the specific functional genes responsible for both aerobic and anaerobic biodegradation of BTEX, PAHs, and a variety of short and long chain alkanes.

Thus, when combined with chemical and geochemical groundwater monitoring programs, the QuantArray®-Petro allows site managers to simultaneously yet economically evaluate the potential for biodegradation of a spectrum of petroleum hydrocarbons through a multitude of aerobic and anaerobic pathways to give a much clearer and comprehensive view of contaminant biodegradation.

The QuantArray®-Petro is used to quantify specific microorganisms and functional genes to evaluate aerobic and anaerobic biodegradation of the following classes of compounds present in petroleum products:



How do QuantArrays® work?

The QuantArray®-Petro in many respects is a hybrid technology combining the highly parallel detection of microarrays with the accurate and precise quantification provided by qPCR into a single platform. The key to highly parallel qPCR reactions is the nanoliter fluidics platform for low volume, solution phase qPCR reactions.

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Fax: 865.573.8133
Web: www.microbe.com

How are QuantArray® results reported?

One of the primary advantages of the QuantArray®-Petro is the simultaneous quantification of a broad spectrum of different microorganisms and key functional genes involved in a variety of pathways for hydrocarbon biodegradation. However, highly parallel quantification combined with various metabolic and cometabolic capabilities of different target organisms can complicate data presentation. Therefore, in addition to Summary Tables, QuantArray®-Petro results will be presented as Microbial Population Summary and Comparison Figures to aid in the data interpretation and subsequent evaluation of site management activities.

Types of Tables and Figures:

Microbial Population Summary	Figure presenting the concentrations of QuantArray®-Petro target gene concentrations (e.g. toluene dioxygenase) relative to typically observed values.
Summary Tables	Tables of target population concentrations grouped by biodegradation pathway and contaminant type.
Comparison Figures	Depending on the project, sample results can be presented to compare changes over time or examine differences in microbial populations along a transect of the dissolved plume.

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Results

Table 1: Summary of the QuantArray®-Petro results obtained for samples 090-MW-102, 091-MW-105, 092-MW-107, and 093-MW-108.

Sample Name Sample Date	090-MW-102 11/15/2023	091-MW-105 11/15/2023	092-MW-107 11/15/2023	093-MW-108 11/15/2023
Aerobic BTEX and MTBE	cells/mL	cells/mL	cells/mL	cells/mL
Toluene/Benzene Dioxygenase (TOD)	**1.18E+02**	<5.00E+00	**1.08E+03**	**6.54E+01**
Phenol Hydroxylase (PHE)	**2.66E+03**	**2.01E+04**	**9.78E+03**	**3.43E+03**
Toluene 2 Monooxygenase/Phenol Hydroxylase (RDEG)	**1.28E+03**	**2.96E+03**	**7.94E+03**	**4.81E+03**
Toluene Ring Hydroxylating Monooxygenases (RMO)	**2.05E+02**	**2.22E+03**	**5.31E+03**	**3.89E+03**
Xylene/Toluene Monooxygenase (TOL)	<4.90E+00	<5.00E+00	<4.90E+00	**4.10E+00 (J)**
Ethylbenzene/Isopropylbenzene Dioxygenase (EDO)	<4.90E+00	<5.00E+00	**9.70E+00**	<4.70E+00
Biphenyl/Isopropylbenzene Dioxygenase (BPH4)	<4.90E+00	<5.00E+00	<4.90E+00	**7.35E+01**
Methylibium petroleiphilum PM1 (PM1)	<4.90E+00	<5.00E+00	<4.90E+00	<4.70E+00
TBA Monooxygenase (TBA)	<4.90E+00	<5.00E+00	<4.90E+00	**5.28E+02**
Aerobic PAHs and Alkanes				
Naphthalene Dioxygenase (NAH)	<4.90E+00	<5.00E+00	<4.90E+00	<4.70E+00
Naphthalene-inducible Dioxygenase (NidA)	<4.90E+00	<5.00E+00	<4.90E+00	**4.14E+02**
Phenanthrene Dioxygenase (PHN)	<4.90E+00	**9.50E+00**	<4.90E+00	<4.70E+00
Alkane Monooxygenase (ALK)	<4.90E+00	<5.00E+00	<4.90E+00	**6.20E+00**
Alkane Monooxygenase (ALMA)	<4.90E+00	<5.00E+00	<4.90E+00	<4.70E+00
Anaerobic BTEX				
Benzoyl Coenzyme A Reductase (BCR)	**8.53E+01**	**8.08E+02**	**4.94E+02**	**1.74E+04**
Benzylsuccinate Synthase (BSS)	**7.87E+02**	**1.40E+04**	**9.79E+03**	**2.92E+04**
Benzene Carboxylase (ABC)	<4.90E+00	**5.03E+01**	**2.91E+01**	**9.81E+01**
Anaerobic PAHs and Alkanes				
Naphthylmethylsuccinate Synthase (MNSSA)	**1.51E+03**	**1.57E+04**	**8.12E+03**	**5.68E+03**
Naphthalene Carboxylase (ANC)	**3.76E+02**	**4.25E+03**	**1.69E+03**	**1.29E+03**
Alkylsuccinate Synthase (ASSA)	**1.46E+01**	**1.87E+01**	**1.00E+00 (J)**	**2.00E-01 (J)**
Other				
Total Eubacteria (EBAC)	**3.39E+06**	**1.36E+07**	**6.61E+06**	**1.21E+07**
Sulfate Reducing Bacteria (APS)	**3.74E+04**	**1.98E+05**	**1.80E+05**	**3.44E+05**

Legend:

NA = Not Analyzed
NS = Not Sampled
J = Estimated Gene Copies Below PQL but Above LQL
I = Inhibited
< = Result Not Detected

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Knoxville, TN 37932
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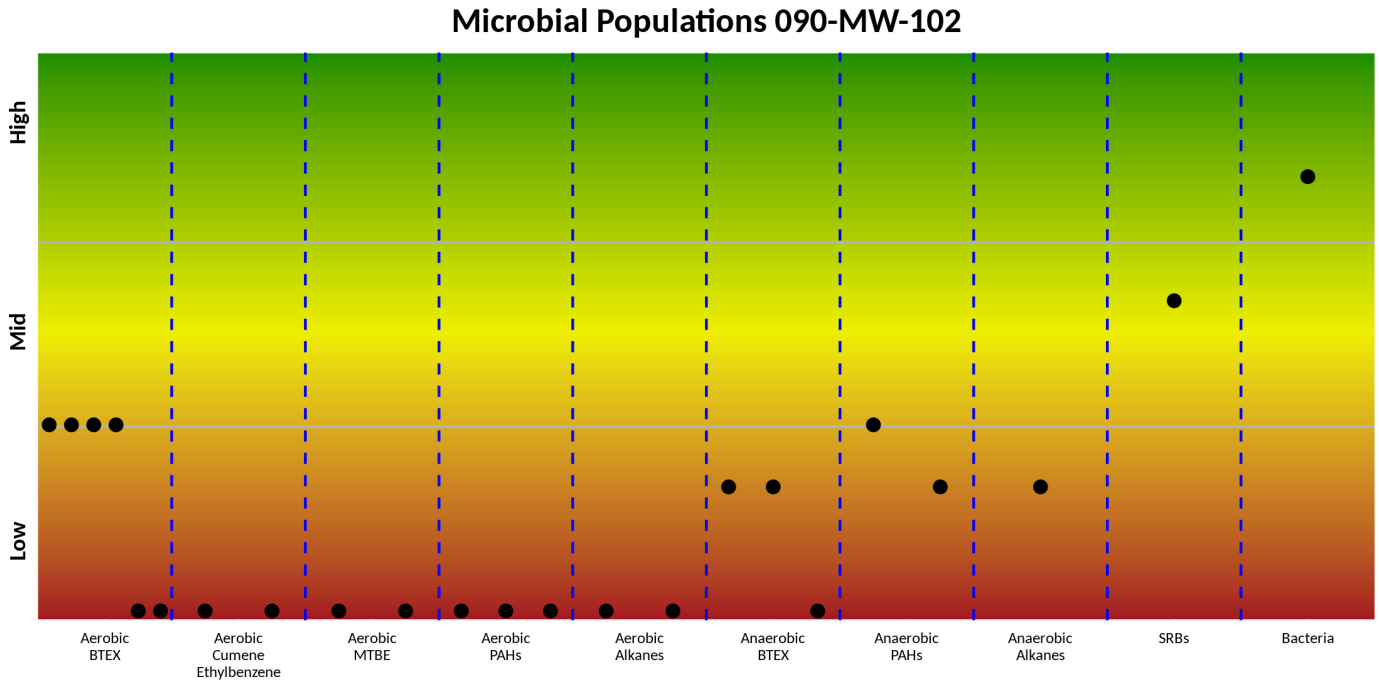

Figure 1: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Aerobic		Anaerobic	
BTEX	TOD, PHE, RDEG, RMO, TOL, EDO	BTEX	BCR, BSS, ABC
Cumene, Ethylbenzene	EDO, BPH4	Naphthalene/Methylnaphthalene	MNSSA, ANC
MTBE/TBA	PM1, TBA	Alkanes	assA
Naphthalene	NAH, NidA		
Phenanthrene	PHN		
Alkanes	ALK, ALMA		

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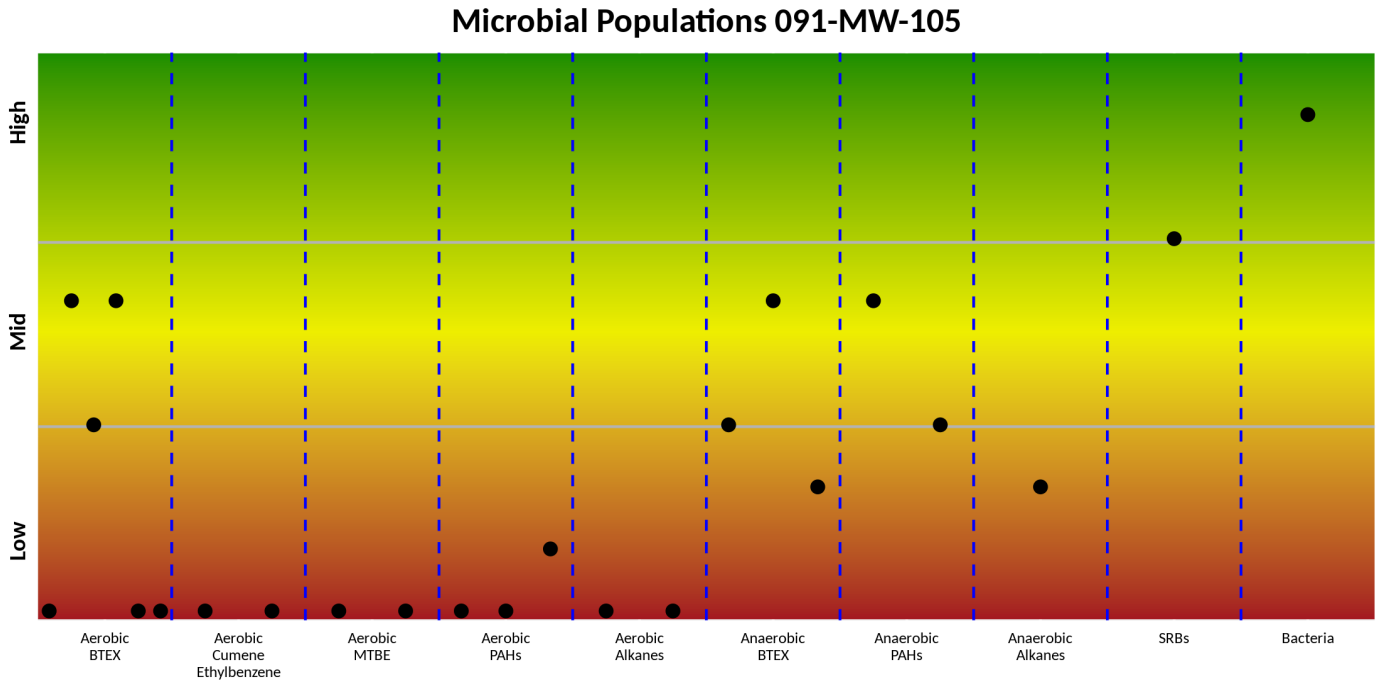

Figure 2: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Aerobic		Anaerobic	
BTEX	TOD, PHE, RDEG, RMO, TOL, EDO	BTEX	BCR, BSS, ABC
Cumene, Ethylbenzene	EDO, BPH4	Naphthalene/Methylnaphthalene	MNSSA, ANC
MTBE/TBA	PM1, TBA	Alkanes	assA
Naphthalene	NAH, NidA		
Phenanthrene	PHN		
Alkanes	ALK, ALMA		

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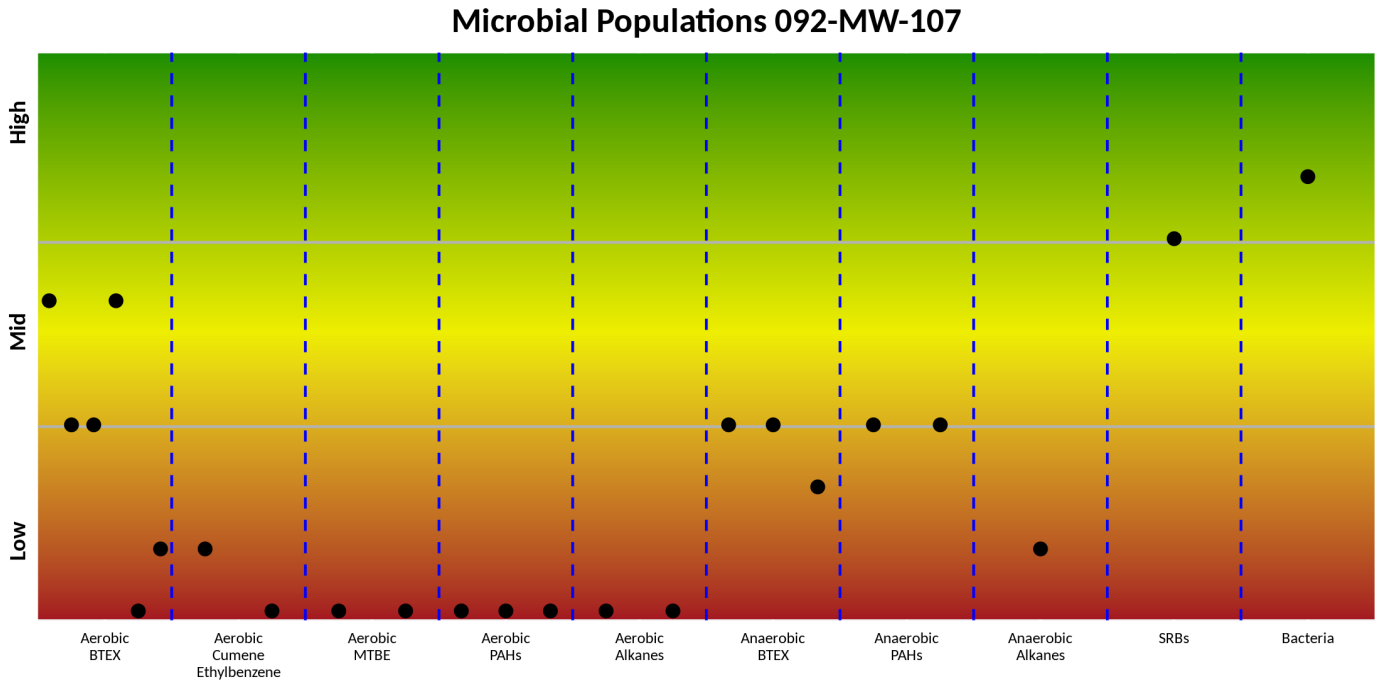

Figure 3: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Aerobic		Anaerobic	
BTEX	TOD, PHE, RDEG, RMO, TOL, EDO	BTEX	BCR, BSS, ABC
Cumene, Ethylbenzene	EDO, BPH4	Naphthalene/Methylnaphthalene	MNSSA, ANC
MTBE/TBA	PM1, TBA	Alkanes	assA
Naphthalene	NAH, NidA		
Phenanthrene	PHN		
Alkanes	ALK, ALMA		

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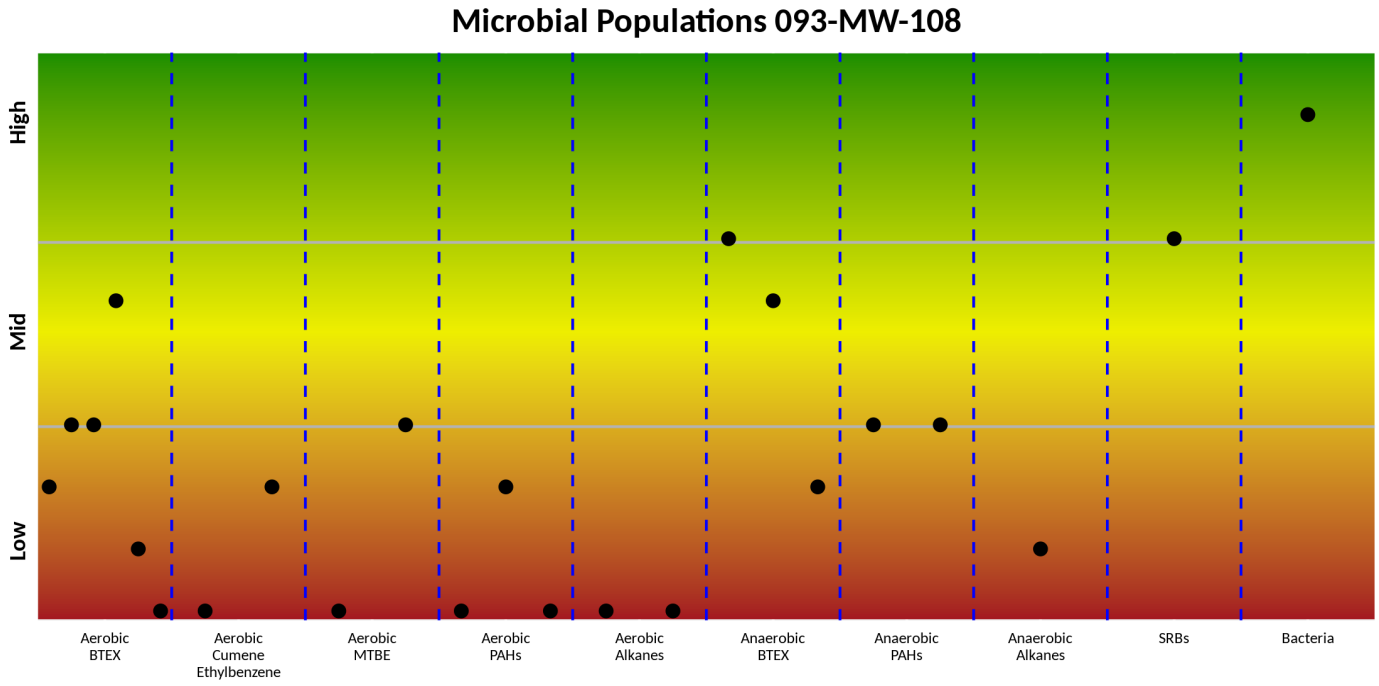

Figure 4: Microbial population summary to aid in evaluating potential pathways and biodegradation of specific contaminants.

Aerobic		Anaerobic	
BTEX	TOD, PHE, RDEG, RMO, TOL, EDO	BTEX	BCR, BSS, ABC
Cumene, Ethylbenzene	EDO, BPH4	Naphthalene/Methylnaphthalene	MNSSA, ANC
MTBE/TBA	PM1, TBA	Alkanes	assA
Naphthalene	NAH, NidA		
Phenanthrene	PHN		
Alkanes	ALK, ALMA		

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Table 2: Summary of the QuantArray®-Petro results for microorganisms responsible for aerobic biodegradation of BTEX and MTBE for samples 090-MW-102, 091-MW-105, 092-MW-107, and 093-MW-108.

Sample Name Sample Date	090-MW-102 11/15/2023	091-MW-105 11/15/2023	092-MW-107 11/15/2023	093-MW-108 11/15/2023
Aerobic BTEX and MTBE	cells/mL	cells/mL	cells/mL	cells/mL
Toluene/Benzene Dioxygenase (TOD)	**1.18E+02**	<5.00E+00	**1.08E+03**	**6.54E+01**
Phenol Hydroxylase (PHE)	**2.66E+03**	**2.01E+04**	**9.78E+03**	**3.43E+03**
Toluene 2 Monooxygenase/Phenol Hydroxylase (RDEG)	**1.28E+03**	**2.96E+03**	**7.94E+03**	**4.81E+03**
Toluene Ring Hydroxylating Monooxygenases (RMO)	**2.05E+02**	**2.22E+03**	**5.31E+03**	**3.89E+03**
Xylene/Toluene Monooxygenase (TOL)	<4.90E+00	<5.00E+00	<4.90E+00	**4.10E+00 (J)**
Ethylbenzene/Isopropylbenzene Dioxygenase (EDO)	<4.90E+00	<5.00E+00	**9.70E+00**	<4.70E+00
Biphenyl/Isopropylbenzene Dioxygenase (BPH4)	<4.90E+00	<5.00E+00	<4.90E+00	**7.35E+01**
Methylibium petroleiphilum PM1 (PM1)	<4.90E+00	<5.00E+00	<4.90E+00	<4.70E+00
TBA Monooxygenase (TBA)	<4.90E+00	<5.00E+00	<4.90E+00	**5.28E+02**

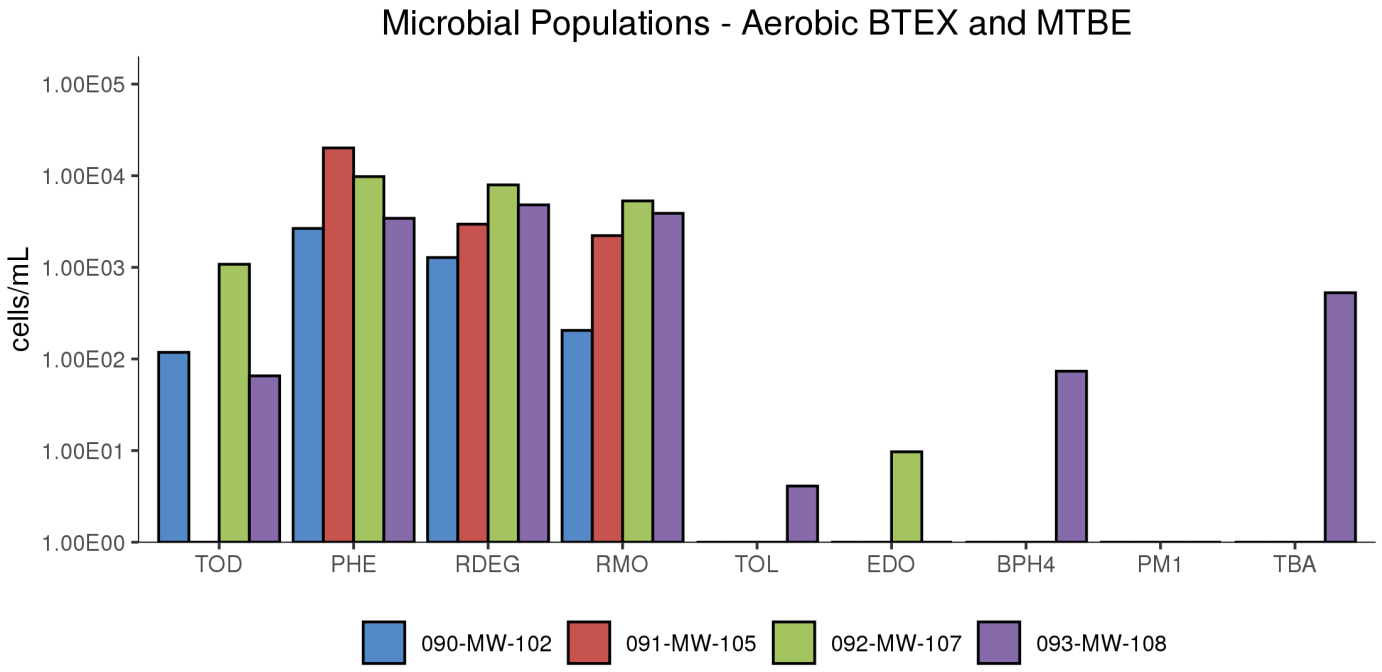

Figure 5: Comparison - microbial populations involved in aerobic biodegradation of BTEX and MTBE.

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Table 3: Summary of the QuantArray®-Petro results for microorganisms responsible for aerobic biodegradation of PAHs and alkanes for samples 090-MW-102, 091-MW-105, 092-MW-107, and 093-MW-108.

Sample Name Sample Date	090-MW-102 11/15/2023	091-MW-105 11/15/2023	092-MW-107 11/15/2023	093-MW-108 11/15/2023
Aerobic PAHs and Alkanes	cells/mL	cells/mL	cells/mL	cells/mL
Naphthalene Dioxygenase (NAH)	<4.90E+00	<5.00E+00	<4.90E+00	<4.70E+00
Naphthalene-inducible Dioxygenase (NidA)	<4.90E+00	<5.00E+00	<4.90E+00	**4.14E+02**
Phenanthrene Dioxygenase (PHN)	<4.90E+00	**9.50E+00**	<4.90E+00	<4.70E+00
Alkane Monooxygenase (ALK)	<4.90E+00	<5.00E+00	<4.90E+00	**6.20E+00**
Alkane Monooxygenase (ALMA)	<4.90E+00	<5.00E+00	<4.90E+00	<4.70E+00

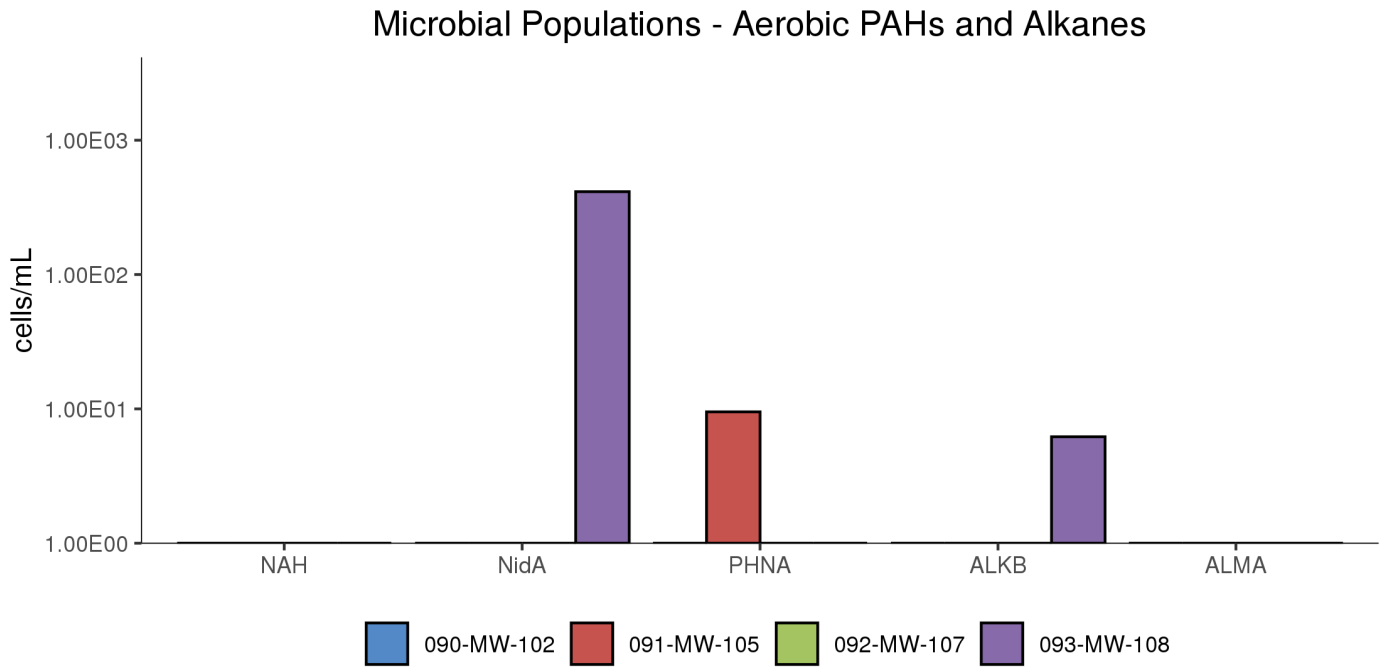

Figure 6: Comparison - microbial populations involved in aerobic biodegradation of PAHs and alkanes.

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Table 4: Summary of the QuantArray®-Petro results for microorganisms responsible for anaerobic biodegradation of BTEX, PAHs and alkanes for samples 090-MW-102, 091-MW-105, 092-MW-107, and 093-MW-108.

Sample Name Sample Date	090-MW-102 11/15/2023	091-MW-105 11/15/2023	092-MW-107 11/15/2023	093-MW-108 11/15/2023
Anaerobic BTEX	cells/mL	cells/mL	cells/mL	cells/mL
Benzoyl Coenzyme A Reductase (BCR)	**8.53E+01**	**8.08E+02**	**4.94E+02**	**1.74E+04**
Benzylsuccinate Synthase (BSS)	**7.87E+02**	**1.40E+04**	**9.79E+03**	**2.92E+04**
Benzene Carboxylase (ABC)	<4.90E+00	**5.03E+01**	**2.91E+01**	**9.81E+01**
Anaerobic PAHs and Alkanes				
Naphthylmethylsuccinate Synthase (MNSSA)	**1.51E+03**	**1.57E+04**	**8.12E+03**	**5.68E+03**
Naphthalene Carboxylase (ANC)	**3.76E+02**	**4.25E+03**	**1.69E+03**	**1.29E+03**
Alkylsuccinate Synthase (ASS)	**1.46E+01**	**1.87E+01**	**1.00E+00 (J)**	**2.00E-01 (J)**

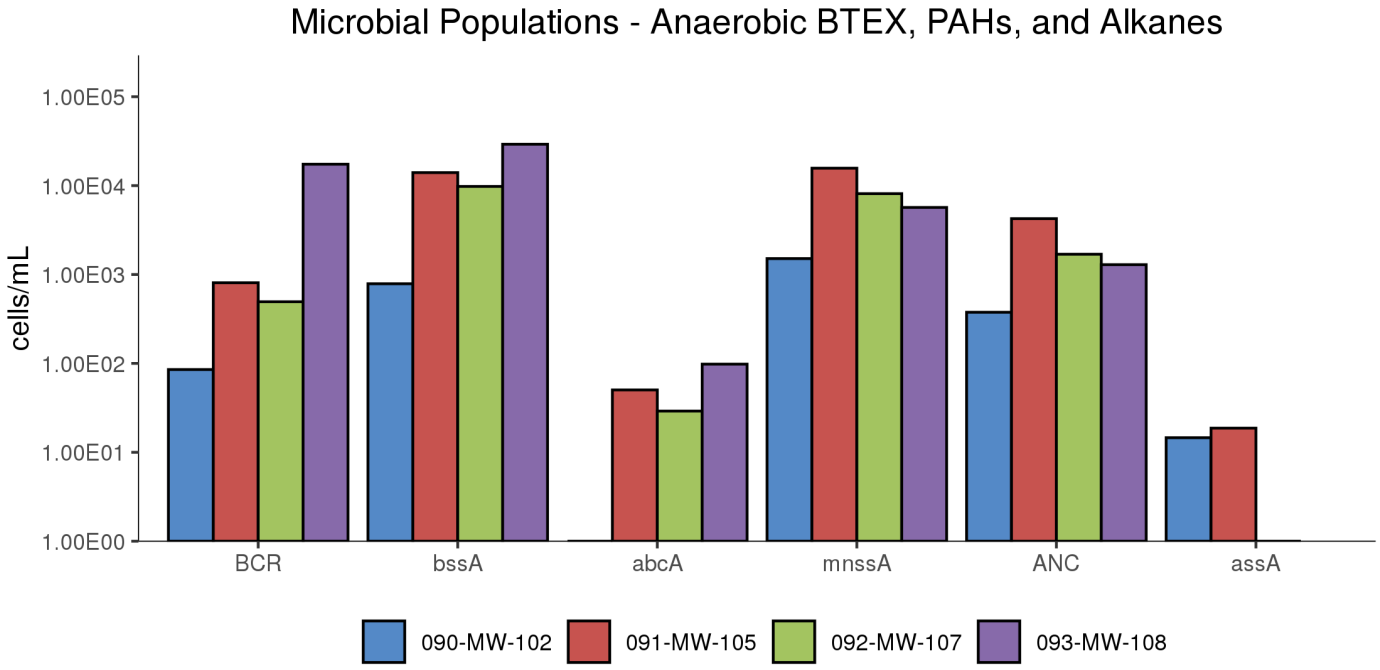

Figure 7: Comparison - microbial populations involved in anaerobic biodegradation of BTEX, PAHs and alkanes.

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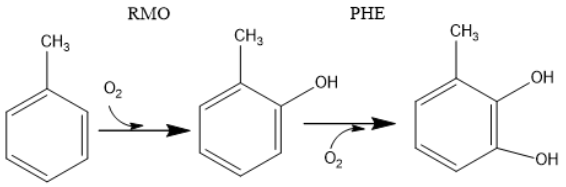
Interpretation

The overall purpose of the QuantArray®-Petro is to give site managers the ability to simultaneously yet economically evaluate the potential for biodegradation of a spectrum of contaminants found in petroleum products through a multitude of aerobic and anaerobic pathways to give a much more clear and comprehensive view of contaminant biodegradation. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Aerobic Biodegradation - Benzene Toluene, Ethylbenzene, and Xylenes (BTEX): At sites impacted by petroleum products, aromatic hydrocarbons including BTEX are often contaminants of concern. Aerobic biodegradation of aromatic hydrocarbons has been intensively studied and multiple catabolic pathways have been well characterized. The substrate specificity of each pathway (range of compounds biodegraded via each pathway) is largely determined by the specificity of the initial oxygenase enzyme. The QuantArray®-Petro includes a suite of assays targeting the initial oxygenase genes of the known pathways for aerobic BTEX biodegradation.

Toluene/Benzene Dioxygenase (TOD): Toluene/benzene dioxygenase (TOD) incorporates both atoms of molecular oxygen into the aromatic ring. Although commonly called toluene dioxygenase, the substrate specificity of this enzyme is relaxed, allowing growth on toluene and benzene along with co-oxidation of a variety of compounds including ethylbenzene, *o*-xylene, *m*-xylene, and trichloroethene (TCE) when expressed.

Toluene/Benzene Monooxygenases (RMO/RDEG) and Phenol Hydroxylases (PHE): The next three known pathways for aerobic biodegradation of toluene (as well as benzene and xylenes) involve two steps: (1) an initial oxidation mediated by a toluene monooxygenase and (2) a second oxidation step catalyzed by a phenol hydroxylase. In these pathways, the toluene monooxygenases have been referred to as "ring hydroxylating monooxygenases" because they initiate biodegradation of toluene by incorporating oxygen directly into the aromatic ring rather than at a methyl group. The ring hydroxylating monooxygenases (RMOs) can be further described as toluene-2-monooxygenases, toluene-3-monooxygenases, or toluene-4-monooxygenases based upon where they attack the aromatic ring.



In General, phenol hydroxylases (PHE) catalyze the continued oxidation of phenols produced by RMOs. However, the difference between toluene monooxygenases (RMOs) and phenol hydroxylases (PHEs) is not absolute in terms of substrate specificity and catabolic function. For example, the TbmD toluene/benzene-2-monooxygenase [1] may be responsible for both the initial and second oxidation step [2].

The RMO, RDEG, and PHE assays target groups of genes encoding enzymes which perform the critical first and/or second steps in the aerobic biodegradation of BTEX compounds. In general terms, the RMO assay quantifies families of toluene-3-monooxygenase and toluene-4-monooxygenase genes. The RDEG assay is used to quantify groups of toluene-2-monooxygenase and phenol hydroxylase genes. Similarly, the PHE assay targets phenol hydroxylase genes and several benzene monooxygenase genes which catalyze both oxidation steps.

Toluene/Xylene Monooxygenase (TOL): The final known pathway for aerobic toluene biodegradation involves initial monooxygenase attack at the methyl group by a toluene/xylene monooxygenase.

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Ethylbenzene Dioxygenase (EDO): Similar to TOD, this group of aromatic oxygenases exhibits relatively broad specificity and is responsible for aerobic biodegradation of alkylbenzenes including ethylbenzene and isopropylbenzene or cumene [3].

Biphenyl Dioxygenase (BPH4): In environmental restoration, biphenyl dioxygenases are best known for cometabolism of polychlorinated biphenyls (PCBs). However, this subfamily includes benzene [4] and isopropylbenzene [5] dioxygenases from *Rhodococcus* spp.

Aerobic Biodegradation - MTBE and TBA: With increased use in the 1990s, the fuel oxygenate methyl *tert*-butyl ether (MTBE) has become one of the most commonly detected groundwater contaminants at gasoline contaminated sites. Pure cultures capable of utilizing MTBE as a growth supporting substrate have been isolated [6] and aerobic biodegradation of MTBE and the intermediate *tert*-butyl alcohol (TBA) has been reasonably well characterized. The QuantArray®-Petro includes quantification of two gene targets to assess the potential for aerobic biodegradation of MTBE and TBA.

Methylibium petroleiphilum PM1 (PM1): One of the few organisms isolated to date which is capable of utilizing MTBE and TBA as growth supporting substrates [6].

TBA Monooxygenase (TBA): Targets the TBA monooxygenase gene responsible for oxidation of TBA by *Methylibium petroleiphilum* PM1 [7].

Aerobic Biodegradation - Naphthalene and Other PAHs:

Naphthalene Dioxygenase (NAH): Naphthalene dioxygenase incorporates both atoms of molecular oxygen into naphthalene to initiate aerobic metabolism of the compound. However, the broad substrate specificity of naphthalene dioxygenase has been widely noted. When expressed, naphthalene dioxygenase is capable of catalyzing the oxidation of larger PAHs like anthracene, phenanthrene, acenaphthylene, fluorene, and acenaphthene. For a more comprehensive list of reactions mediated by naphthalene dioxygenases, see the University of Minnesota Biocatalysis/Biodegradation Database. (http://eawag-bbd.ethz.ch/naph/ndo.html, [8]).

Phenanthrene Dioxygenases (PHN): The PHN assays quantify phenanthrene/naphthalene dioxygenase genes from a diverse collection of microorganisms including *Pseudomonas*, *Burkholderia*, *Sphingomonas*, and *Acidovorax* spp. As with other naphthalene dioxygenases, substrate specificity is relatively broad and phenanthrene dioxygenases have been implicated in the biodegradation of naphthalene, phenanthrene, and anthracene and the co-oxidation of larger PAHs. Moreover, at least one research group has suggested that the PHN group of phenanthrene/naphthalene dioxygenases may be more environmentally relevant than the classical *nah*-like naphthalene dioxygenase [9].

Aerobic Biodegradation - *n*-alkanes: The *n*-alkanes are a substantial portion of petroleum products and are a component of TPH concentrations. The QuantArray®-Petro also includes quantification of alkane monooxygenase genes (ALK) which allow a wide range of *Proteobacteria* and *Actinomycetals* to grow on *n*-alkanes with carbon lengths from C_5 to C_{16} [10]. The QuantArray®-Petro also includes a second type of alkane hydroxylase (almA) which catalyzes the aerobic biodegradation of longer chain alkanes (C_{20}-C_{32}) by some *Alcanivorax* spp. considered dominant in marine systems [11].

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Anaerobic Biodegradation - Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX): BTEX compounds are also susceptible to biodegradation under anoxic and anaerobic conditions although biodegradation pathways for each compound are not as well characterized as aerobic pathways. The QuantArray®-Petro includes sets of assays targeting a number of upper and lower pathway functional genes involved in the anaerobic catabolism of BTEX compounds for better evaluation of anaerobic biodegradation at petroleum contaminated sites.

Benzylsuccinate Synthase (BSS): Of the BTEX compounds, toluene biodegradation under anaerobic conditions is the most extensively studied and best characterized. The first step in this pathway, mediated by benzylsuccinate synthase (*bss*A) is the addition of fumarate onto the toluene methyl group to form benzylsuccinate. While additional pathways are possible, some bacterial isolates capable of anaerobic biodegradation of ethylbenzene and xylenes follow the same metabolic approach where the first step is the addition of fumarate.

Anaerobic Benzene Carboxylase (ABC): Although additional pathways are possible, the only pathway for anaerobic biodegradation of benzene elucidated to date is initiated by a benzene carboxylase enzyme.

Benzoyl Coenzyme A Reductase (BCR): Benzoyl-CoA is the central intermediate in the anaerobic biodegradation of many aromatic hydrocarbons. Benzoyl-CoA Reductase (BCR) is the essential enzyme for reducing the benzene ring structure.

Anaerobic Biodegradation - PAHs: The anaerobic biodegradation of PAHs involves analogous mechanisms to those described for anaerobic biodegradation of BTEX compounds. For example, the anaerobic biodegradation of methyl-substituted PAHs like 2-methylnaphthalene is initiated by fumarate addition to the methyl group while the only characterized pathway for anaerobic naphthalene biodegradation is initiated by a carboxylase.

Naphthylmethylsuccinate Synthase (MNSSA): MNSSA is analogous to the benzylsuccinate synthase described above for anaerobic biodegradation of toluene. Naphthylmethylsuccinate synthase catalyzes the addition of fumarate onto the methyl group of 2-methylnaphthalene [12].

Anaerobic Naphthalene Carboxylase (ANC): To date, the only pathway that has been characterized for anaerobic biodegradation of naphthalene is initiated by a naphthalene carboxylase enzyme [13].

Anaerobic Biodegradation - *n*-alkanes: As mentioned previously, the *n*-alkanes are a substantial portion of petroleum products and should be considered particularly when site cleanup goals include TPH reduction. The addition of fumarate is a common mechanism for activating and initiating biodegradation of a variety of petroleum hydrocarbons under anaerobic conditions including *n*-alkanes. The QuantArray®-Petro includes quantification of alkyl succinate synthase genes (assA) which have been characterized in nitrate reducing and sulfate reducing isolates utilizing *n*-alkanes from C_6 to at least C_{18} [14].

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